
BULGARIA'S ROAD TO HEALTH FOR ALL

Medicina i Fizkultura

MINISTRY OF HEALTH OF THE PEOPLE'S REPUBLIC
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**An outline of the strategy of the People's Republic of Bulgaria
for the attainment of the goal of Health for All
by the year 2000**

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1, FOREWORD

The adoption of the goal of Health for All by the Year 2000 by the Member States of the World Health Organization in May 1977 became a turning point in its history and an event with profound long-term implications for the health and social policies of all nations. The challenge of "the attainment by all citizens of the world by the year 2000 of a level of health that would enable them to lead socially and economically productive lives" has given birth to a programme of peaceful cooperation and competition between countries of different social and political systems, small or large, developing or developed. In this, the World Health Organization and its Member States have set an example of how different interests, ideologies and political systems can work together in the name of an attainable goal promising well-being and better quality of life to the millions of ordinary people throughout the world.

The past ten years have witnessed some significant progress towards the achievement of this objective, as well as many difficulties and obstacles. The International Conference on Primary Health Care which took place in Alma-Ata, USSR, in 1978 was a major early landmark in the right direction. Under the leadership of Dr Halfdan Mahler, the Director General of WHO and a dedicated architect of the Health for All movement, the WHO Secretariat has developed an orderly conceptual and practical system of methodological instruments and guidelines in support of the efforts of the Member States. Many countries have succeeded in accomplishing profound structural reforms in their national health care systems and in re-orienting a considerable part of their human, material and other resources towards providing efficient and accessible primary health care, preventing socially significant disease and other health problems, and ensuring social equity in health care. Other countries, however, have experienced serious economic difficulties, often aggravated by natural disasters, hostilities, dependence inherited from the colonial past, and lack of a developed infrastructure. But irrespective of such divergences and of the uneven rate of progress towards the common goal, Health for All has become a global task, a system of new values, and a set of specific strategies within the framework of world health during the last quarter of the Twentieth Century.

Bulgarian health workers and the entire Bulgarian society, as well as the health workers and the peoples of many other countri-

es, are clearly aware of the fact that the achievement of Health for All could be significantly accelerated if the world could free itself of the burden of the colossal expenditures on arms. The mere existence of nuclear arsenals having the potential of a global destruction puts in question not only the achievement of Health for All but the very survival of humankind.

The realization of the most humane goal of Health for All, its accompanying system of values, and the corresponding strategies, are in full concordance with the ideology and the objectives of the social development of the People's Republic of Bulgaria. For forty years now the principles underlying Bulgarian socialist health care and social policy have been consonant with the fundamental requirements proclaimed by the World Health Assembly in 1977; i. e. accessibility of health care, social equity in the allocation of health resources, government and community responsibility for the health of all citizens, and priority of prevention.

At present, an intensive social and economic reorganization is taking place in the People's Republic of Bulgaria. It is related to real needs arising in the process of building up a mature socialist society. In the course of this reorganization utmost priority is given to the satisfaction of human needs and to providing the optimal conditions for a harmonious development of the individual person. One of the important prerequisites to the attainment of these objectives is the improvement of the health state of the population, the eradication or control of some diseases, the significant decrease in the impairments and disabilities resulting from other diseases, and the achievement of a harmony between man and his environment.

The intensive international exchange of information and experience, and the programme documents and methodological tools produced by WHO, have found a vivid resonance among Bulgarian health workers and health planners, the public opinion and the government. Since 1977, national programmes dealing with key health and social problems have been drafted and adopted in accordance with the Health-for-All principles. Naturally, the time has now come for an overall review of the current state, trends and future projects in the main areas of public health and social development which will determine the attainment of the Health-for-All objectives.

The present document: "Bulgaria's Road to Health for All" has been prepared in response to the unanimous decision of WHO Member States for developing national strategies and plans of action in accordance with global and regional Health-for-All strategi-

es (Resolution WHA 35.23 of May 1982). The ways and means of achieving the goal, and the available resources for that purpose, are outlined in the document. However, this paper should not be regarded as a closed system, or as a programme fixed once and for all; on the contrary, it should be seen as a log-book, subject to amendments and regular updating in accordance with the distance traversed and the conditions of navigation.

Each section of the paper contains a brief analysis of a particular problem, an outline of the approaches to its solution, and a statement of the intermediate and final targets.

It is foreseen to set up a Coordination Council which will monitor the implementation of the separate activities within the national strategy, and coordinate the work of all the participants in the process. The Council will analyze annually the progress towards the accomplishment of the specific tasks according to an agreed timetable. An overall evaluation of the strategy will be carried out biennially by the Collegium of the Ministry of Health and the Presidium of the Medical Academy. The results of these interim evaluations will be reported to the Social Council of the Government.

2.

SYNOPSIS OF OBJECTIVES AND TARGETS

Promotion of healthy lifestyles

Balanced nutrition

— By the year 2000, the prevalence of obesity expressed as an overweight exceeding by 20 per cent or more the optimal body weight, should be reduced: the prevalence of obesity among men should not exceed 10 per cent, and that among women should not exceed 15 per cent.

— By the year 2000, the mean values of serum cholesterol should be less than 200 mg/100 ml (5.17 mol/l) for the age groups from 15 to 64 years, and less than 150 mg/100 ml (3.87 mol/l) for children up to 14 years of age.

— By the year 2000, the mean daily consumption of salt should not exceed the values of 6 to 8 g sodium chloride, with a trend towards a further decrease to 4 to 6 g per day.

— The nutrition education of the population should be improved, so that by the year 1990 no less than 40 per cent of the population should have adequate knowledge of diet that is optimal for them; by the year 2000 this proportion should be over 60 per cent.

— By the year 2000, the consumption of animal fats should be reduced by 30 per cent; that of sugar and sugar products by 35 per cent; the consumption of fresh and chilled vegetables, fruit and fish should double and the production of vegetable and fruit juices and mousses additionally enriched with calcium and potassium should be significantly increased.

— From 1988 on, obligatory labelling of foodstuffs should be introduced, in order to inform the consumers about their nutritional and biological value; sodium chloride contents should be indicated on the packing of commercially available table-salt.

Physical activity

— By the year 1990, an integrated system for mass promotion of physical culture and sport should be fully implemented; the criterion of its evaluation should be the actual level of physical fitness of the population, taking into account the characteristics of specific age- and occupational groups.

— By the year 1990, the number of curricular and extra-curricular hours for physical activity of schoolchildren should be increased as follows:

grades I-III up to 13-14 hours weekly,
grades IV-VII up to 12-13 hours weekly, and
grades VIII-XII up to 8-9 hours weekly.

— An obligatory minimum of 6 days for walking-tours should be included in each school term; and an all-year round camping base should be ensured for 5000 schoolchildren by 1988.

— By the year 1990, the proportion of the adults from 18 to 65 years of age who are engaged in sports (three or more times a week) should reach 50 per cent; by the year 2000 this proportion should be 80 per cent.

— By the year 1990, no less than 60 per cent, and by the year 2000 no less than 90 per cent of the population (from 18 to 65 years of age) should be familiar, both theoretically and practically, with the standards of optimum physical fitness and activity appropriate to them.

Smoking cessation

— By the year 1990, the total sales of cigarettes should be reduced by 20 per cent as compared with 1985, and by the year 2000 they should be further reduced by 30 per cent as compared with 1990.

— The proportion of smokers in the population should decrease from 42 per cent in 1985 to 35 per cent in 1990, and to 25 per cent in 2000.

— By the year 1990, the proportion of schoolchildren (from 12 to 18 years of age) who adopt the smoking habit should be less than 5 per cent; by the year 2000 this proportion should drop to under 1 per cent.

— From 1988 on, the obligatory warning notice on the packets of cigarettes relating to the harmful effect of smoking on health should be amended to include information on the nicotine and tar content and on the amount of carbon monoxide released.

— From 1988 on, short-term courses on behavioural techniques of smoking cessation should be provided by the general out-patient and polyclinic facilities, and by the health "workshops" attached to industrial enterprises; in order to ensure psychosocial support to all the smokers who have decided to give up the habit, mutual-aid clubs or groups for ex-smokers should be organized at their place of work.

— By the year 1990, the smoking habit should be eradicated among all physicians and teachers, on a voluntary basis.

Reduction of alcohol consumption

— From 1987 on, and until the end of the Ninth Five-Year Plan for the socioeconomic development of the country, the total production of spirits should be reduced by 10 per cent each year; taxation on home-distilled spirits should be raised.

— Alcohol beverages should be excluded from the state plan for the commodity circulation within the internal trade network.

— The number of shops allowed to sell spirits, and the number of catering establishments licenced to serve spirits, should be significantly restricted.

— Sanctions should be applied against students and officials, notably physicians and teachers, who consume alcohol.

— The mean annual alcohol consumption per capita should decrease from 7.32 l absolute alcohol in 1985 to less than 5 l in 1990 and to less than 4 l in 2000.

— By the year 2000, there should be a reduction by at least one-third in the incidence of liver disease due to alcohol abuse; the incidence of some specific alcohol related disorders such as delirium tremens, hallucinosis, Korsakoff's psychosis and the fetal alcohol syndrome should decrease to a level that would make them clinical rarities.

— By the year 2000, the proportion of road accidents due to alcohol use should be reduced to under 15 per cent of all accidents.

— By the year 2000, the number of people in need of specialized antialcoholic treatment should decrease by 50 per cent as compared with their number in 1985.

Promotion of environmental health

— By the end of 1990, at least 2 to 3 settlement systems and at least 25 towns and villages in each region of the country should attain the standards of model districts of sanitation and hygiene.

— By the year 1990, no less than 55 per cent of the industrial enterprises should meet fully the requirements of hygienic regulations; by the year 2000 this proportion should be up to 90 per cent.

— In the planning and construction of new housing estates, residential quarters and areas, it should be mandatory to include provisions for sports centres and playgrounds giving the inhabitants an opportunity for physical exercise on a daily basis.

Rearing a healthy and harmoniously developed young generation

— By the year 1990, infant mortality should be further reduced and should not exceed 11 per 1000 live births for the nation as a whole; by the year 2000 infant mortality should be under 9 per 1000 live births, with a trend towards further decrease.

— By the year 2000, the proportion of newborns with low birth weight of less than 2500 g should be under 6 per cent.

— By the year 2000, the proportion of newborns with severe congenital malformations and anomalies, especially those of the neural tube and the cardiovascular system, should be reduced to 2.5 per 1000 live births.

— Perinatal mortality from all causes of death should decrease from 12.3 per 1000 live births in 1985 to 11 per 1000 in 1990, and to 8 per 1000 in 2000.

— Post-neonatal mortality (i. e. the mortality of liveborn children who die at an age from one month to one year) should decrease from 7.1 per 1000 live births in 1985 to 5 per 1000 in 1990, and to less than 3.5 per 1000 in 2000.

— The stillbirth rate should decrease from 6.6 per 1000 births in 1985 to 6 per 1000 in 1990, and to less than 4 per 1000 in 2000.

— By the year 1990, in no region of the country infant mortality should exceed the mean value of 16 per 1000 live-births; and in no rural area of any region this value should exceed 19 per 1000 live births; by the year 2000 these indices should be further reduced to 14 and 16 respectively, per 1000 live births.

— By the year 1990 no less than 80 per cent of the pregnant women should be familiar with the risk factors relating to fetal health; by the year 2000 their proportion should be no less than 90 per cent.

— By the year 2000, the proportion of parentless children who are adopted or given for foster rearing by families within less than one year of their admission to a social welfare institution, should increase to 85-90 per cent.

Biomedical sciences and technologies

— Up to 1990 scientific research should be re-oriented, and a strategy should be developed, under the auspices of the Medical Academy, to implement a research programme in support of Health for All, with the following priorities:

1. Health system research: new patterns of organization and management.
2. Epidemiological analysis and mapping of socially significant diseases.
3. Interrelations between the onset and the course of socially significant diseases, lifestyles, and ecological and biological factors; relative weight and contribution of each one of them to morbidity.
4. Development of new technologies for the prevention and control of socially significant diseases.

Material resources for health

— By the year 1990, all the necessary prerequisites should be provided for an overall implementation of the economic approach in health planning, management, and evaluation.

Development of human resources for health

— By the year 1990, the health service system should employ 28235 physicians (or 31.3 physicians per 10000 inhabitants),

6228 dentists (or 6.9 dentists per 10000 inhabitants), 4356 pharmacists (or 4.8 pharmacists per 10000 inhabitants) and 94223 nurses and other mid-level health personnel (or 104.6 nurses and mid-level health workers per 10000 inhabitants).

— By the year 1990, the physicians/nurses ratio in the health services should be improved by increasing it from 1:2.56 to 1:2.62, with a trend towards further improvement aiming at 1:3.50 in 2000.

Prevention and control of socially significant diseases and related health problems

— By the year 2000, there should be a decrease in the mortality rate from ischaemic heart disease, bringing it down to 190 per 100 000, i. e. a decrease by 24 per cent as compared to 1985; in the age group 45-54 years the mortality rate of ischaemic heart disease should not exceed 66 per 100000.

— By the year 2000, the mortality rate of stroke (all age groups) should decrease to 184 per 100000 i. e. a decrease by 30.2 per cent as compared to 1985.

— By 1995 about 50 per cent of the families in the country should be enabled to have their blood pressure checked in their homes.

— During 1987-88 computerized case registers for myocardial infarction and stroke should be set up in 4 regions; by the year 1990 a national system for monitoring these diseases should be in operation.

— From 1988 on the essential drugs for home treatment of patients with medium and severe hypertension should be provided on prescription free of charge.

— By the year 1990, the prevalence of arterial hypertension among children from 7 to 14 years of age should be less than 5 per cent and by the year 2000, — less than 3.5 per cent.

— By the year 2000, the prevalence and mortality rates of chronic respiratory diseases should decrease by 25-30 per cent as compared to 1985.

— By the year 2000, the incidence of congenital and early acquired damages to the central nervous system should be reduced by about 50 per cent as compared to 1985.

— By the year 1990, about 65 per cent of the population should be covered by active and regular medical follow-up (dispensarization).

— By the year 2000, the mortality rates from cancer should

decrease to 138 per 100000 (all age groups), i. e. reduction by about 16 per cent as compared to 1985.

3.

THE HEALTH POLICY OF THE PEOPLE'S REPUBLIC OF BULGARIA

The People's Republic of Bulgaria (area: 111 000 square kilometers; population: 8 949 618) is one of the oldest countries in Europe. It was founded in 681 and in the early Middle Ages became the cradle of the Slavonic script and a major focus of culture. Its stormy history passed through periods of flourishing and decline, and through centuries-long struggles for national independence and self-government.

Already during the first years following the Liberation of the country from the Ottoman rule (in 1878), a project for the organization of a national health service was developed by Bulgarian physicians. The first health projects at the time were influenced by the advanced Russian community medicine, which emphasised prevention and democracy. However, within the framework of the capitalist state, Bulgarian public health policies were subordinated to the interests of the ruling class and gradually yielded to the private capitalist enterprise. Under the conditions of the bourgeois state the solution of national health problems suffered serious neglect.

Immediately after the victory of the Socialist Revolution on the 9th of September 1944, the new People's Power set itself the task to resolve the major problems of public health which had been aggravated by the conditions resulting from the Second World War. In that period the health indices for the nation showed high infant mortality rates and high prevalence of communicable diseases such as tuberculosis, diphtheria, typhoid fever, exanthematic typhus and malaria. Hospital services were inadequate and restricted to cities and big towns.

The Socialist Revolution proved a turning point in Bulgarian public health. The essence of the health policy of the People's Power was phrased in brief by Georgi Dimitrov: *"Health and working capacity are the most precious national wealth"*. According to the Constitution of the People's Republic of Bulgaria, health is a basic human right safeguarded and promoted by the state and the socialist society. After its establishment the Ministry of Health

was assigned the important task to overcome the shortcomings of bourgeois public health and to develop a new system of health promotion and protection.

The first step of the People's Power towards the establishment of a new health care system was the putting into practice of the Leninist principles of socialist public health, i. e. to make highly qualified medical care available to the entire population free of charge; to promote prevention as the mainstream of public health; to integrate medical science with medical practice; and to ensure the participation of all the sectors of society and of the people's organizations in the implementation of health measures.

The system for preventive and therapeutic care in Bulgaria at present is built up on the territorial principle (residential or occupational). Its methodology emphasizes strongly the so-called dispensarization approach, i. e. the active medical follow-up of large groups of the population. A network of hygiene and epidemiological monitoring stations was established as well as a State Sanitary Inspectorate. As of 1951, all the citizens of the country were entitled to medical care free of charge.

A decisive impetus to the advance of public health was given by the April Plenum of the Central Committee of the Bulgarian Communist Party in 1956. The supreme principle underlying what became known as the April policy of the Party — *"Everything in the name of man, everything for the welfare of man"*, evolves from the ultimate goal of communism, to promote the free and harmonious development of everybody. This political position ensured a lasting and comprehensive support to public health and laid down the lines for its further development: better coverage with health care, concentration of resources and establishment of health facilities with improved diagnostic and therapeutic potential, promotion of medical science and technology, and transfer of the best achievements in world health science and practice.

Within the provision of the Constitution and the Public Health Act the access to free health care is guaranteed to everybody in Bulgaria. The comprehensive network of health facilities now includes 3851 outpatient and polyclinic services, 187 hospitals (with a bed/population ratio of 93 hospital beds for a population of 10000), 196 sanatoria, 1199 creches and nurseries, 167 social welfare homes, 4644 pharmacies, and 29 hygiene and epidemiological inspectorates. The number of health workers is over 190 000, including 25 665 physicians, 5745 stomatologists, 4209 pharmacists and over 84 000 mid-level health personnel. The annual number of outpatient medical contacts is over 86 million, of hospital admissions — over 2 million, and of persons covered by medical follow-up care — over 4 million.

Health care is being brought increasingly closer to the population by constantly strengthening the frontline of primary health care and emphasizing the coordinative role of the district physician. In the field of prevention the measures aiming at the improvement of the living environment become increasingly comprehensive and effective. The dynamic social and economic development, the rising standards of living, and the involvement of the community are conducive to a constant improvement of the health status of the population. At present, the average life expectancy is over 71 years (versus 48.4 years in 1944) and infant mortality has decreased to less than 15 per 1000 live births. Many communicable diseases have been eradicated and there is a trend towards a decrease in temporary and chronic disability; physical fitness and mental health, especially as concerns the younger generations, enjoy a high priority, and the well-being of the entire population has been improved. It is foreseen to expand the principle of free medical care in the forthcoming years by providing all the essential drugs to those who need them free of charge. On a number of the important health indicators the People's Republic of Bulgaria ranks among the highly developed countries.

The advances in public health run in parallel with the progress of Bulgarian medical science. At the Tenth Congress of the Bulgarian Communist Party, a new approach towards science and education was adopted, aiming at interlinking them more closely with social, economic, and cultural development. The October Plenum of the Central Committee of the Bulgarian Communist Party in 1971 set the task of reorienting science to socially relevant goals and integrating research with training and practical work at all the institutions of higher education. As a result, the Medical Academy was established in 1972. It was entrusted with the following tasks:

- further concentration of the scientific potential in biomedical research and its integration with medical education and medical care;
- integrated management of research, the development of science, medical technology and higher education;
- promotion of international collaboration.

The establishment of the Medical Academy led to an efficient concentration of cadres and resources, and to their orientation towards key health problems. Health research was pursued not only within the Medical Academy but also in collaboration with the Bulgarian Academy of Sciences, the Academy of Agriculture, and other institutions.

During the past decade 25 biomedical research institutes,

5 higher medical institutes (medical schools), and 3 centres for applied research and production were established. The Medical Academy thus became a powerful research, diagnostic and therapeutic complex which also has the important function of training highly skilled health workers.

Much of the research potential available at the Medical Academy is engaged in the development of new biomedical technologies, including original pharmaceutical products, advanced medical electronic equipment and other items produced to meet the local needs or for export in both developed countries and developing ones. More than 1600 technological inventions and innovations have been registered by the Medical Academy in the past five years.

A number of scientific achievements have already been put into practice.

Examples of practical applications of the research and development activity of the Medical Academy include, inter alia:

- the rapid advance of cardiosurgery in Bulgaria: at present all the known heart operations (transplantation inclusive), are being performed; the needs of implantation of cardiac pacemakers are completely satisfied on a national scale;
- the setting up of about 50 haemodialysis units: now Bulgaria is one of the leading countries in the world as regards the coverage of the population with this type of medical care, and Bulgarian expertise and products in this field are increasingly demanded abroad;
- the supplying of the hospital units in the country with diagnostic and therapeutic equipment, including computerized diagnostic tomographs, echographs, automated systems for clinico-laboratory investigations, etc.
- a recent development is the establishment of two units for extracorporeal, non-invasive lithotripsy (renal calculus destruction).

The resolutions of the February 1985 and the January 1986 Plenums of the Central Committee of the Bulgarian Communist Party emphasized that the further development of Bulgarian society would have to be based on the accelerated advance of science and technology and the application of their products in all spheres of life. The Thirteenth Congress of the Bulgarian Communist Party laid the foundations of a new important stage in the social development of Bulgaria by adopting a national long-term strategy for scientific and technological progress developed under the guidance of Todor Zhivkov, Secretary General of the Central Committee of the Bulgarian Communist Party.

The strategy envisages a profound reorganization of science, with the aim of overcoming existing flaws in certain areas, and mobilizing the creative potential of the nation. The accelerated implementation of scientific and technological advances, and the transfer of leading world expertise, should provide the basis and conditions for a new stage in the promotion of health, prevention of diseases, and overall improvement of the work capacity and quality of life of people. The most important objective is to qualitatively upgrade health care and, by means of a selective reorganization, to direct all the efforts towards the solution of the most significant health problems. Bulgarian society has reached now a stage when it becomes possible to carry out a scientific and technological revolution in public health at an accelerated pace. Research into the molecular basis and mechanisms of heredity, of carcinogenesis, of the hormonal and the central nervous control over the physiological functions, hold out unexpected opportunities for preventing and treating disease, and for promoting health. In due cognizance of the key importance of mental health and human behaviour, and of the role of the brain in the homeostasis of the organism, special attention and resources have been given to an integrated programme of neuroscience and behavioural science research.

In the light of this, the control of socially significant diseases comes to the fore. Due to the high morbidity, mortality and disability, and the serious social, economic and psychological impact of cardiovascular, cerebrovascular and respiratory diseases, malignant neoplasms, injuries, diabetes, and mental disorders, these conditions have been selected as the targets of a major national programme for primary prevention, treatment, and rehabilitation. The programme includes a variety of social, behavioural, and medical measures and specifies clearly the responsibilities for their implementation, both within and outside the health care system. Dispensarization will remain a key approach, and according to the plan, 65 per cent of the population would be covered by active medical follow-up by 1990.

At this stage it is particularly important to shift the focus from a preoccupation with the treatment of disease only towards health promotion and disease prevention, in order to maximize the chances of all the people to enjoy lives free from disease and disability, at the highest possible levels of physical fitness and mental activity that are commensurate with their age. In accordance with the Constitution of the World Health Organization, which emphasizes that health is a state of complete physical, mental and social well-being and not merely the absence of disease or disabi-

lity, the activities of the health system will increasingly be directed not only towards the persons who are ill but also towards the healthy. An example of the new measures within this new comprehensive approach to the promotion of health is the establishment of the so-called "health workshops" in the industrial enterprises and organizations. There is now in Bulgaria a growing awareness that, in view of the multiple determination of health, programmes for health promotion and disease prevention prompt actions by all the state, economic and social bodies and organizations; public health is now clearly seen as a national cause. According to this new approach, health care must begin with health education of the population, and participation by the people is required in all programmes dealing with prevention, treatment, rehabilitation, and social assistance.

More than forty years have elapsed since the first People's Government announced in its Programme the strategy for the protection of the people's health. During that period of time fundamental changes have taken place in Bulgaria. The development of the health care system has paralleled the overall economic and cultural advance of the country. In the decades ahead, Bulgarian health workers, and the nation as a whole, face major new tasks and challenges, clearly outlined in the historic decisions of the Thirteenth Congress of the Bulgarian Communist Party. These decisions have set the signposts of Bulgaria's road to Health for All by the year 2000.

4.

CONTEMPORARY STRUCTURE OF THE FRONTLINE OF HEALTH CARE IN BULGARIA

The health policy of Bulgaria lays priority upon the development and strengthening of the frontline of health care, including the rural therapeutic and preventive health services, the urban therapeutic, paediatric and obstetric and gynecologic services, emergency care units, factory and school health services, hygiene and epidemiologic inspectorates. The steady pursuance of this course is in full conformity with the strategy of Health for All by the year 2000, as it is exactly at the level of first contact that most of the health problems of the population should be effectively resolved.

Primary health care in Bulgaria is organized at four levels —

district, provincial, regional and national, in accordance with the administrative division of the country.

The most common type of health care is provided on out-patient basis by the polyclinic and the rural health service. The bulk of the preventive, diagnostic, therapeutic and rehabilitative activities are carried out at the polyclinics. The types of services now in existence are outlined below.

Rural health service: covers a therapeutic, paediatric and dental care catchment area and serves a population of 3500 to 5000, i. e. the population of one big, or two or more smaller neighbouring villages.

Polyclinic: this is a general health centre providing qualified primary and specialized consultative care to urban and rural populations. It can be either a separate unit, or a department of a provincial or district hospital. In the cities a polyclinic usually serves about 40 000 people.

According to the number of the population served and to the functions carried out, there are five types of polyclinics. Polyclinics of type I provide consultations in all major medical specialties, while the polyclinics of type II are somewhat more restricted in the range of the services they offer. Polyclinics of types III-V are less specialized but still provide a variety of essential forms of care.

Polyclinics of types I to III are set up in the towns and cities, while polyclinics of type IV and V are predominantly in the bigger villages.

First aid and emergency stations are established in all the big towns of the country. Within each provincial hospital there is a department of emergency care staffed by physicians, surgeons and paediatricians and, in some cases, by specialized resuscitation teams. Similar, but smaller departments are organized at the district hospitals (their total number in the country is 85).

The prehospital emergency care units are equipped with radiotelephones, remote ECG-recorders, etc. Their staff is trained to apply life-saving measures at the site of an accident or during the transportation of the patient to the hospital.

The National Emergency Care Institute in the capital city of Sofia disposes of specially equipped aircraft and more than 250 highly skilled specialists who are on call round-the-clock. When required, airborne emergency teams can provide specialized interventions in the outermost part of the country.

Specialized dispensaries (out-patient health centres) for patients with mental disorders, neoplasms, chest diseases, and skin and venereal diseases, also provide primary and secondary care.

to the population on a territorial basis. Each serves a population of one or more provinces.

The territorial principle (residential or occupational) of organization of primary health care makes it possible to integrate all medical and sanitary measures relating to the individual or to the environment. The present system includes the following types of health districts:

- rural health district: covers one or more villages with a total population of 1500 to 2500; staffed by a physician, a dentist, a medical assistant (feldscher), midwives, nurses and auxiliary personnel;
- therapeutic district: the basic unit of outpatient care for the adult population; covers a population of 3000 to 3500, and is staffed by a general practitioner, a nurse and a medical assistant;
- factory health district: set up at enterprises employing 1200 to 2000 workers and staffed by a physician, a dentist, several medical assistants and nurses; if the number of the employed women is over 800, a midwife is attached to the team.
- paediatric district: covers a population of about 1000 children up to 15 years of age; it is staffed by paediatrician and at least two nurses;
- school health district: set up at any educational institution with 2000 or more students;
- obstetric and gynecological district: covers an area with a population of 17 000 to 18 000, or an industrial enterprise employing at least 4000 workers; provides primary obstetric and gynecologic care; it is staffed by a specialist in obstetrics and gynecology and several midwives; in rural health services women's consultations are carried out by the rural district physician in collaboration with the corresponding provincial or district hospital;
- dental health district: it may be part of the rural health service or of the polyclinic, or may be an independent dental health unit located at a district hospital. or a stomatologic polyclinic in a provincial centre; dental care for children and adolescents is provided by specialists in children's dental health; dental care to workers is delivered by factory dentists.

The basic health needs of the population are met by the health workers operating in the districts described above. Other types of more specialized primary care are provided by the speciality consultations of the polyclinics, as well as by the dispensaries and the provincial dental polyclinics.

During the past decade teamwork has been introduced increasingly into health care. One or more such teams work out of each hospital depending on its size. Each team is composed of a variety of health workers: several general practitioners and pediatricians, a specialist in obstetrics and gynecology, a surgeon, a neurologist, an ear-nose-throat specialist, an ophthalmologist and a dermatologist. By coordinating their working hours the team provides diagnostic and therapeutic care of high quality.

The members of the district health care team perform a variety of functions: preventive, diagnostic, therapeutic and rehabilitative. The factory medical team may also be involved in health assessment of the industrial environment, reassignment of workers with health problems to appropriate jobs, supervision of diet and nutrition, organization of physical fitness activities, etc.

In the last decade the equipment of the frontline of health care with up-to-date methods and technology for diagnosis and treatment has been considerably improved. For example, more than 1100 portable electrocardiographs have been delivered to primary care units, the majority of them to rural health services. The latter are regularly supplied with the basic reagents necessary for express diagnostic laboratory tests.

The territorial organization of primary health care, and the assignment of each individual to a local health service, do not preclude the availability of medical consultation on request, with a specialist of one's own choice. Every department at a University hospital allots a certain number of hours to free consultations on demand. These consultations are free of charge and are arranged by appointment, with minimum waiting time.

A variety of other provisions have been introduced to make high-quality health care available to the largest possible number of people. The most important among them are the following:

- in the course of each year, according to a timetable, specialists from the Medical Academy make visits to the districts and the provinces of the country to provide consultations at the local health services;
- the regional specialists visit regularly the district hospitals, and, similarly, the district specialists visit the rural health services;
- 145 polyclinics (types IV and V) have recently been set up in the centres of the smaller residential areas (with a population of 4000 to 20 000); they are staffed by

general physicians, pediatricians and dentists, and, in the larger areas, by specialists in obstetrics and gynecology as well; in such a way the rural population of the country is also provided with specialized care.

Twenty-eight hygiene and epidemiological inspectorates are set up in the country. They operate at province level, but ten out of them exercise regional functions relating to environmental hygiene, radiation safety, laboratory investigations, and methodological support.

The hygiene and epidemiological inspectorates control environmental factors and conditions and compliance with hygienic requirements.

The following areas are covered by the hygiene and epidemiological inspectorates: epidemiology of communicable diseases and microbiology; work hygiene; hygiene of industrial chemistry; municipal hygiene; parasitology; rodent and insect control; air pollution and hazardous agents in residential areas; heavy metals and nitrates in the soil and water; quality of drinking water; food hygiene; child and adolescent health and health education.

5.

PROMOTION OF HEALTHY LIFESTYLES

The social policy pursued by the Bulgarian Communist Party and the Government is aiming at the creation of the most favourable conditions for active life and for the full development of individual abilities and qualities. The socialist way of life — promoted by joint efforts of the workers in all social spheres — implies the adoption and maintenance of healthy lifestyles by all the age- and social groups of the population. The responsibility for the attainment of this rests with the state, the enterprise, the health workers and the people at large.

Already in 1981, the Council of Ministers of the People's Republic of Bulgaria adopted two important programmes — on health education and on the adoption and maintenance of healthy lifestyles. Subsequently, other programme documents have been approved in relation to specific aspects of the projects. The core of the National Programme for Prevention and Control of Social-

ly Significant Diseases, adopted in 1987, comprises measures aiming at the promotion of a healthy mode of life. Special emphasis is laid upon the comprehensive and intersectoral approach that has to be adopted.

The national strategy for the promotion of healthy lifestyles is based upon scientifically accepted findings. During the past decades it has been demonstrated that no less than 80% of all the episodes of demographically, socially and economically important diseases (cardiovascular, neoplastic, occupational, traumatic, metabolic, nervous and mental disorders) are related to the impact of a limited number of *risk factors*. The harmful effect of these factors can be amplified by hazardous behaviour and by unfavourable conditions of life and work.

But it is in the power of society to modify the patterns of human behaviour and to change the conditions of life and work in order to facilitate the attainment of desired goals. The elimination or reduction of behavioural risk factors would result in a decrease in morbidity and mortality from socially significant diseases, in increased physical fitness and better mental health.

The set of measures proposed along these lines are related to seven aspects of the healthy mode of life: balanced diet and nutrition, physical activity, smoking cessation, reduction of alcohol use and eliminating of drug abuse, promotion of mental health, prevention of accidents and injuries, and health education.

Balanced diet and nutrition

The qualitative and quantitative balance of the sources of energy and of the nutrients is of utmost importance for the growth and development of the human body, for its resistance to diseases, for the cycle of reproduction, including lactation, for physical fitness and adequate recovery after disease or injury. Unbalanced nutrition increases significantly the risk of hypertension, atherosclerosis, cardiovascular and gastrointestinal diseases, diseases of the liver and gallbladder, degenerative joint diseases, diabetes mellitus and other metabolic diseases.

The higher standard of living and the increased income levels of the population are conducive to an increased consumption of some foods and hence to a higher risk of unbalanced nutrition. For instance, in Bulgaria the average annual consumption per ca-

pita of some foodstuffs has increased in 1982 as compared to the corresponding consumption in 1972 as follows: meat and meat products — from 41.4 kg to 68.3 kg; fats — from 16.2 kg to 21.9 kg; milk and dairy products — from 116.6 l to 179.2 l; eggs — from 122 to 217. This positive trend has been accompanied by some unfavourable dietary patterns: the proportion of carbohydrates is excessive, the consumption of vegetables and fruits in winter and spring is inadequate, the ratio between animal and vegetable fats in the diet is far from being optimal. The proportion (children and adolescents inclusive) affected by obesity (i. e. body weight exceeding by 20 per cent or more the optimal weight) is constantly increasing. The measures aiming at providing a balanced diet for schoolchildren and students, as well as for some occupational groups, are still inadequate. Taking into consideration the fact that about half of the schoolchildren and students, and more than half of the working people are covered at present by organized catering and that it is foreseen to increase their proportion to 65 and 80 per cent respectively by the year 1990, it is clear that the introduction of balanced dietary patterns into organized catering would be the most efficient way towards balanced nutrition on a national scale.

Already in 1981, a research-based Comprehensive System for Balanced Nutrition of the Bulgarian People was adopted. It covers a wide range of issues: age-specific physiologic norms and dietary patterns corresponding to the different conditions of life and work; requirements put before the national agro-industrial complex for the provision of the necessary food resources; ways and means of improving the people's knowledge about balanced nutrition; and needed future research along these lines.

In the course of implementation of the System for Balanced Nutrition on a national scale, the following objectives will be pursued:

1. By the year 2000, the prevalence of obesity (expressed as overweight exceeding by 20 per cent or more the optimal weight) should be reduced to less than 10 per cent in the male population, and to less than 20 per cent in the female population.
2. By the year 2000, cholesterol content in the blood serum should be reduced to under 200 mg/100 ml (5.17 mmol/l) for the age groups 15 to 64, and to under 150 mg/100 ml (3.87 mmol/l) for children up to 14 years of age.
3. By the year 2000, the mean consumption of table salt per capita should be reduced to no more than 6-8 g sodium

chloride per day, with a trend towards a further decrease to 4-6 g per day.

4. The nutrition education of the population should be improved, so that by the year 1990 no less than 40 per cent of the people (all ages) would have adequate knowledge about the diet appropriate to them; by the year 2000 this percentage should be at least 60, as ascertained by questionnaire surveys.
5. By the year 2000, the consumption of animal fats should be reduced by 30 per cent and that of sugar and sugar products — by 35 per cent; at the same time, the consumption of fresh and frozen vegetables, fruit and fish should at least double, and the production of vegetable and fruit juices and mousses additionally enriched with calcium and potassium should be substantially increased.
6. From 1988 on, obligatory labelling of foodstuffs should be introduced, in order to inform the consumers about their nutritive and biological value; the concentration of sodium chloride should be indicated on the packing of commercially available table-salt. By 1987, amendments to the Bulgarian State Standards for processed and semi-processed foods should be initiated, in order to make them consistent with up-to-date scientific norms of balanced nutrition.

Physical activity

It is well known that physical activity, e. g. practising aerobic exercise or sports engaging the large muscle groups and using up to 60 per cent of the cardiac and respiratory capacity for a minimum of 20 minutes, and at least three times a week, is an efficient preventive measure against cardiovascular, respiratory and locomotor disease, obesity, hypertension, diabetes mellitus, and stress-related conditions. Vice versa, physical inactivity is known to be an important risk factor.

Within the framework of Bulgarian health policy a special emphasis is laid upon the promotion of physical culture and sports, and the material support to these efforts is significant. Scientific norms and programmes have been worked out and adopted. As a matter of fact, mass physical culture and recreation activities are already to a great extent integrated with public health.

A chief prerequisite to the attainment of the strategic aims relating to this aspect of a healthy lifestyle is the Integrated Sys-

tem for Mass Physical Culture and Sport, which has been designed for all the population groups and will be implemented during 1987-1990. In this system, the main criterion of evaluation will be the actual level of physical fitness and ability of individuals and groups, taking into consideration the age and occupation-related characteristics. With that end in view, detailed norms and methods of self-testing have been worked out. They offer opportunities for adequate self-evaluation of the level of physical fitness, and allow the choice of the individually appropriate programme of physical exercises or sports. The large-scale introduction of this System will be a major factor in the upgrading of the level of physical fitness of the entire population during the coming decades.

Special attention is paid to schoolchildren in order to form the habit of physical activity at an early age.

The most important objectives along these lines are as follows:

1. The number of curricular and extracurricular classes for physical activity of schoolchildren should be increased:
for grades I to III up to 13-14 hours weekly,
for grades IV to VII up to 12-13 hours weekly, and
for grades VIII to XII up to 8-9 hours weekly.
2. There should be at least six obligatory days for walking tours in each school term, and a year-round mountain camping base should be provided for about 5000 schoolchildren by 1988.
3. By the year 1990, the proportion of the adult population in age groups 18 to 65 years, who are engaged in adequate physical fitness activities three or more times a week should reach 50 per cent, and by year 2000 — 80 per cent.
4. By the year 1990, no less than 60 per cent, and by the year 2000, no less than 90 per cent of the adult population (ages 18 to 65) should be acquainted — theoretically and practically — with the scientific norms of optimal physical fitness and activity.

Smoking cessation

Among the risk factors related to the lifestyle, smoking is the one that is most harmful to health and the social environment. It is now proven that there is a causal relationship between smoking and more than three-quarters of the cases of lung cancer,

(a high proportion of the cases of ischaemic heart disease, atherosclerosis, and some other vascular diseases, and many respiratory diseases, etc. The hazardous effects of smoking are intensified when it is combined with other risk factors, such as alcohol consumption (carcinoma of the larynx, the oral cavity and the oesophagus), with occupational hazards, e. g. exposure to asbestos, aniline dyes, chromium, nickel and other metals, with hormonal contraceptives (coronary heart disease, myocardial infarction). Smoking during pregnancy increases the risk of spontaneous abortion, premature birth and low birth weight. The children born to smoking mothers show a retarded development during their first two years of life. The hazardous effects of "passive smoking" (inhaling by non-smokers of air contaminated with nicotine aerosols) are analogous to that of "active smoking", although somewhat less severe. The accidents, related to smoking, have to be paid due attention as well (fires, explosions, etc.).

Unfortunately, no significant decrease in the proportion of smokers in the population has been achieved up to date, despite the legislative, administrative and educative measures that have been adopted (for example, it is now illegal to sell cigarettes and tobacco to minors, or to advertise tobacco products; it is obligatory to print a warning notice on the hazardous effect of smoking on all the packets of cigarettes; smoking on industrial premises, in state institutions, public transport vehicles, etc. is not allowed).

Within the framework of the National Programme for the Prevention and Control of Socially Significant Diseases, it is foreseen to intensify considerably the measures and activities aiming at smoking control with the final purpose of eradicating this risk factor and hence decreasing morbidity and mortality from many diseases related to smoking.

The measures aiming at the fulfilment of this task will be based on several approaches — educative, legislative, administrative and economic. For example, the public, health, cultural, information and sport institutions and organizations are required to co-ordinate their activities so as to promote a radical change in the social attitude that would have to become intolerant to smoking. In this case social and psychological approaches will be used, including behavioural modeling on examples provided by public and popular figures; smoking would be regarded as an activity incompatible with the status of an elected leader in political and public organization, or with the professions related to the health and education of the young generation (teachers, physicians, sportsmen, etc.). The establishment of youth production brigades and other teams of workers who are non-smokers will be encouraged.

Along with the stricter controls over the compliance with the administrative restrictions on smoking, a set of economic measures will be elaborated to eliminate the financial incentives to producers and trade organizations in the marketing and sales of cigarettes and other tobacco products.

The following specific objectives will be pursued:

1. By the year 1990, the sales of cigarettes should be reduced by 20 per cent as compared with 1985, and by the year 2000 — by further 30 per cent as compared with 1990.
2. The proportion of smokers in the population should be reduced from 42 per cent in 1985 to 35 per cent by 1990, and to 25 per cent by 2000.
3. By the year 1990, the proportion of schoolchildren (from 12 to 18 years of age) who learn the smoking habit should be reduced to under 5 per cent and by the year 2000 — to under 1 per cent.
4. By the year 1990, no less than 75 per cent of the adult population should be able to specify the diseases related to smoking (as ascertained by questionnaire surveys); by the year 2000 the proportion of the informed population should be 95 per cent.
5. From 1988 on, the contents of the obligatory warning notice on the packets of cigarettes about the hazardous effects of smoking should be amended to include information on the nicotine and tar content and on the amount of carbon monoxide released in the course of smoking.
6. From 1988 on, short-term courses on behavioural therapy aiming at smoking cessation and overcoming the smoking habit should be available at the outpatient and polyclinical units and in the "health workshops" attached to industrial enterprises; such courses should be organized with the support of the relevant research institutions and the Trade Unions; in order to provide support to all the smokers who have decided to give up smoking, mutual-aid clubs or groups for ex-smokers should be organized at their place of work.
7. By the year 1990, the smoking habit among all physicians and teachers should be eradicated on a voluntary basis.

Reduction of alcohol consumption and prevention of alcohol and drug dependence

The increasing mean alcohol consumption per capita (predominantly due to an increase in the consumption of spirits with a high concentration of alcohol) during the past decades is a trend of great social concern as it correlates with an increase in alcohol-related morbidity and mortality, traffic, home and occupational accidents, crime and other legal offences, and family breakdown, divorces inclusive. It is well known that, apart from severe conditions such as cirrhosis of the liver, chronic diseases of the digestive system, psychoses and personality deterioration, which are induced by the syndrome of alcohol dependence in its advanced stage, other problems, such as depression, chronic irritability, and reduced intellectual capacity may result from relatively moderate but regular alcohol consumption. Alcohol consumption increases the risk of cardiovascular diseases, some types of cancer, and metabolic disorders; it has a harmful effect on the sexual function and fertility, and in the case of pregnant women can cause severe damage to the foetus (fetal alcohol syndrome). The "hidden" impact of alcohol abuse, e. g. distressed family life, child abuse, and the loss of creativity, complete the spectrum of damages inflicted to society by alcohol.

In 1986, taking into consideration the rising danger, on the one hand, and the tradition of sobriety deeply rooted in Bulgarian culture, on the other hand, the Communist Party and the Government adopted important decisions relating to the implementation of a nation-wide programme for prevention and control abuse and for a decisive reduction in alcohol consumption. This programme will be put into effect by the joint efforts of different state agencies and community organizations and comprises legislative, administrative, economic, educative and medical measures, as well as a research component.

The strategy of Bulgaria for prevention and control of alcohol use is in full conformity with the concepts of the World Health Organization in this field. The basic assumptions, underlying the Bulgarian strategy, are as follows:

1. Priority is given to *primary prevention*, with the purpose of averting the acquisition of the habit of alcohol consumption. The coverage of medical care provided to patients with alcohol dependence and alcohol-related diseases will be enlarged but the key objective is to reduce significantly the number of such patients.

2. Emphasis is laid on the *population approach* to the prevention of alcohol-related problems, i. e. the goal is to achieve a decrease in the mean alcohol consumption by the entire population; the effort to influence some target population groups at risk (e. g. workers in the public transport system, pregnant women) is an important additional task.
3. So-called "social" drinking, incidental and habitual alcohol abuse, and chronic alcohol dependence, cannot be clearly distinguished from one another, and represent the successive stages of the morbid condition which in many cases advances at a rapid pace. The aim is, therefore, to stop this progression as early as possible.
4. The strategy is comprehensive in its character – it is intended to restrict availability and supply, and at the same time to decrease demand. The legislative, administrative and economic measures are a prerequisite to the effectiveness of the educative measures. This approach requires the mobilization and co-ordination of the efforts of all the parties involved in the carrying out of the Programme.
5. Within the framework of the health system, the prevention and control of alcohol-related problems is a task assigned to *all* health services and to *all* levels of care, i. e. not only to specialized units. The contribution of the district physician is a key one, because he is the first to come in contact with persons at risk and, hence, best able to detect alcohol problems at an early stage. It is necessary to train adequately all the health workers who enter in direct contact with the population served, making use of up-to-date methods of persuasive communication and behaviour modification.
6. Within the framework of the programme, it will be necessary to set up an operative unit for information support assuring regular feedback for the monitoring and evaluation of the results obtained at every stage.

The putting into effect of the strategy for the prevention and control of alcohol use is supported by a number of administrative measures that have been recently adopted. The most important among them are:

- an annual 10-per-cent reduction is envisaged in the production of spirits, to be in effect from 1987 on till the end of the Ninth Five-Year Plan for the socioeconomic development of the country;

- an increase in taxation on home-distilled spirits with a high alcohol concentration (since 1987);
- exclusion of sales of alcohol from the state targets for output of the internal trade network;
- significant reduction of the number of shops allowed to sell spirits, and of restaurants and canteens licensed to serve spirits;
- prohibition against serving spirits (with a high alcohol concentration) at public ceremonies and social functions;
- sanctions against students and officials — notably physicians and teachers, for alcohol consumption;
- establishing of a network of preventive, counselling and therapeutic services in order to help persons with alcohol dependence at its initial stage without interrupting their work.

It is expected that the putting into effect of these measures and the strategy outlined above will result in considerable social gains, the most important among them being the following;

- a decrease of the mean alcohol consumption per capita from 7.32 l absolute alcohol in 1985 to less than 5 l in 1990 and less than 4 l in 2000;
- by the year 2000, a decrease should be achieved by at least one third in the incidence of alcohol-related liver disease; the incidence of alcohol-related disorders such as delirium tremens, hallucinosis, Korsakoff's psychosis and fetal alcoholic syndrome should be reduced to a level that would make it possible to regard them as clinical rarities;
- by the year 2000, the proportion of traffic accidents due to alcohol use should be reduced to under 15 per cent of all accidents;
- by the year 2000, the number of people of specialized antialcoholic treatment should be reduced by 50 per cent as compared with their number in 1985.

The dependence and abuse of opiates, psychostimulants, etc. is not a major health problem in Bulgaria despite the country's location on the transit way connecting the Middle East with West Europe. However, apart from the efficient activity of the customs and other law enforcement officials that can be regarded as primary prevention of drug dependence, it would be necessary during the coming 10-15 years to intensify public alertness to the hazard.

An important problem is the inappropriate use or abuse of licit drugs which can amount to dependence. The benzodiazepin-

es are most often subject to misuse. This phenomenon is often caused by the inconsiderate prescribing of tranquilizing agents by physicians. This is why it will be necessary to restrict the production and dispensing of benzodiazepine drugs and to educate all the physicians about their dependence potential.

Health education

It is foreseen to upgrade significantly health education, the approaches and methods used, and to improve the quality and efficiency of its organization. The efforts of the specialists in health education will be directed towards the putting into effect of a set of specific behaviours aiming at the prevention and control of socially significant diseases and the promotion of a healthy lifestyle.

6.

PROMOTION OF ENVIRONMENTAL HEALTH

Under the conditions of accelerated industrialization, urbanization and other processes accompanying social and economic development, problems relating to the multiple effect of the environment on health have arisen all over the world. Their solution in conformity with the goal of Health for All requires major efforts on a national scale and efficient co-ordination on an international scale.

No less than 13 000 out of the 55 000 chemical compounds industrially produced in the world have potential toxic effects on human health. Laboratory findings, based on animal experimentation, suggest that about 2000 compounds may be carcinogenic; for 30 out of them it has been proved that exposure causes cancer in man. More than 20 compounds induce congenital malformations. The health hazards of toxic environmental pollution are associated with acute poisoning, neoplasms, congenital malformations, retarded growth and development, infertility, skin diseases, immune system damage, neurological and behavioural disorders, chronic liver disease, lung, kidney and joint disease, cardiovascular disorders and endocrine dysfunction. There is a causal relationship between environmental noise levels, and arterial hypertension and mental disorders. Another risk factor is ioniz-

ing radiation. People are most often exposed to it as a result of unnecessary X-ray examinations. Despite the advance in toxicology and environmental health, no precise data are available at present on the long-term cumulative effects of exposure to toxic substances in small doses.

Under the contemporary conditions of work and life, and of demographic and economic changes, protection of the environment is of utmost importance for the prevention of disease and the promotion of health.

In Bulgaria, environmental control and work safety and protection have a comprehensive and highly differentiated legislative basis, e. g. in the Air, Soil and Water Preservation Act, the Protection of Nature Act, the Law on Human Settlements, the Public Health Act, the Water Law, and the Female Labour Protection Regulations. The State Council of the People's Republic of Bulgaria has adopted Basic Principles of the Promotion of a Healthy Environment. Two sections of the legislation on the Integrated State Plan for Scientific, Technological, Social and Economic Development of the People's Republic of Bulgaria during the Ninth Five-Year-Plan (1986-1990), passed in 1986, are devoted to specific measures aiming at air, water and soil protection, such as the introduction of wasteless technologies. A National Programme for the Promotion of Equilibrium between Man and Nature has been drafted, and the elaboration of a law restricting the hazardous effects of physical factors on work, home and recreational conditions is in progress. Proceeding from these laws, a number of regulations, ordinances, instructions, standards, norms, etc. have been adopted. The Ministry of Health is entrusted with the task to monitor the observance of the hygienic regulations. Making use of the network of hygienic and epidemiological inspectorates in the country, it exercises preliminary and ongoing control and applies sanctions against the offenders.

All chemical substances produced or imported in the country are subject to hygienic registration requiring a detailed toxicological assessment. Hygienic regulations are provided for: air pollutants, drinking water, permissible contamination of water basins and of coastal seawater, permissible soil contamination with heavy metals and chemicals, and disposal or recycling of solid waste in towns and villages.

Methods of soil contamination control, of monitoring the transfer and transformation of the most common air pollutants, of biologic contamination surveillance of the soil and water, and of noise control have been developed and put into practice. Epidemiological surveys are carried out regularly in order to deter-

ine the effects of air and water pollutants on health and the impact of drinking water composition on the incidence rate of some diseases. Research is directed towards the development of new biological agents for plant protection, in order to restrict the use of pesticides in agriculture.

Many efforts are directed towards the promotion of a healthy occupational environment. According to the Constitution of the People's Republic of Bulgaria, every citizen is entitled to the right of working under safe conditions. The newly adopted Labour Code provides detailed regulations concerning the employers' obligations to provide safe work conditions and the control functions of the Trade Unions. An important achievement of Bulgaria is the system of long-term prospective planning of sanitary measures relating to work safety and hygiene. The objective assessment of work conditions is based upon laboratory examinations of multiple variables related to the occupational environment and the process of work and of their effect on the workers' health. At present, the annual number of laboratory tests and analyses carried out in industrial and agrarian units throughout the country exceeds one million.

In spite of the results obtained, many problems relating to environmental protection remain unresolved. Special attention will be paid to them during the remaining years of the Ninth Five-Year Plan for the socioeconomic development of the country, as well as during the 1990-2000 period.

Measures along these lines are incorporated in the National Programme for the Prevention and Control of Socially Significant Diseases, adopted in 1987. The most important among them are:

1. The Committee for the Protection of the Environment must exercise regular and thorough control over the implementation of all measures relating to the prevention of socially significant diseases.
2. Within the framework of the National Programme for the Promotion of Equilibrium between Man and Nature, local programmes will be drafted for specific measures aiming at the restriction of the pathogenic effects of the risk factors related to large-scale industrial enterprises.
3. The Committee for the Protection of the Environment and the District People's Councils will map the distribution of various hazards in those regions of the country which are at high risk and propose specific measures corresponding to up-to-date norms and standards, in

order to reduce or eliminate the hazardous effect of environmental factors on human health.

4. The efforts of all the administrative bodies and economic and public organizations which participate in the nationwide movement for settlement development and sanitation will be directed predominantly towards the reduction of the hazardous effects of environmental factors on health. *By the end of 1990, at least 2 or 3 settlement systems and at least 25 towns and villages in each province of the country should be developed into models of sanitation and hygiene.*
5. The state, economic and trade-union organizations must exercise regular and uncompromizing control over the implementation of the National Programme and the local programmes of industrial enterprises for work safety and hygiene.
6. The economic and trade-union organization will adopt efficient measures aiming at the optimization of the environmental parameters and at the restriction of occupational hazards. *By the end of 1990, 55 per cent of the industrial enterprises (encompassing no less than 70 per cent of the industrial workforce) should meet the requirements of hygienic regulations; by the year 2000, their proportion should exceed 90 per cent.*
7. The comprehensive activities carried out in the "health workshops" will be directed towards the prevention and control of socially significant diseases among the workers by means of eliminating occupational hazards and promoting a healthy mode of life among them. In order to promote healthy lifestyles among the workers, it is necessary to organize the "health workshops" as functional units of the industrial organization that serve as a link between the management, the health service, the Trade Unions, and the sports and other public organization. These units should develop the material base of health care (workers' hospitals and polyclinics, factory health services, preventive services); of physical culture and sport (sports facilities, playgrounds, swimming pools, health zones) and of recreation (holiday homes); and monitor the compliance of the occupational environment and the production process with the requirements of hygienic regulations.
8. The Central Council of the Bulgarian Trade Unions and the branch trade unions will assume major responsibility

ities in the prevention and control of health hazards and in the promotion of healthy lifestyles; they will integrate efforts along these lines with other activities related to the defence of the interests of the workers. The indices of the physical fitness and health state of the workers, as well as the hygienic assessment of the occupational environment, will be taken into consideration in evaluating the results of enterprise development and in assigning material incentives to the administration and shop-stewards.

9. It is necessary to upgrade substantially the health services provided with priority to workers. High-quality medical care should be brought closer to their place of work, with a particular emphasis on the prevention of occupational pathology. A large network of 950 factory medical districts and 870 dental care units has already been established. Ninety workers' hospitals, 29 workers' polyclinics and 53 preventoria have been set up in big industrial centres. The entire health service system, the research institutes and the Medical Academy will have to provide with priority highly qualified health care to the workers.

7.

REARING A HEALTHY AND HARMONIOUSLY DEVELOPED YOUNG GENERATION

The promotion of the health of pregnant women, mothers, children and adolescents has always been in the focus of the social policy of the People's Republic of Bulgaria. As early as 1946 — less than two years after the Socialist Revolution — the Maternity and Child Protection Act was passed. According to the provisions of the Constitution adopted in 1947, maternity is protected by full-pay maternity leave — before and after delivery, by medical care free of charge, and by a number of other privileges concerning living and work conditions. The socialist acquisitions relating to pregnancy, delivery and child rearing have been significantly expanded by a 1973 Decree of the State Council and by other legislation, the most important piece being the Decree No. 16 of April 1984. The most important measures adopted are as follows:

- full-pay maternity leave during pregnancy and in the

post-partum period, ranging from 120 to 180 days (depending on the number of children);

- after the end of the full-pay maternity leave, entitlement to a leave with pay equal to the minimum salary in the country, for a period ranging from 6 months to 2 years (depending on the number of children);
- after the end of the maternity leave with pay, the mother is entitled to unpaid leave till the child is three years old (irrespective of the number of children); this leave counts towards the service record;
- in case of live birth the mother is entitled to an one-time maternity grant;
- the mother is entitled to a monthly child allowance; the amount varies according to the number of children (single mothers are entitled to higher allowance);
- during an illness of the child, the mother is entitled to a full-pay leave irrespective of her length of service (till the child is nine years old);
- pregnant women, mothers of children under one year of age, and all the children up to the age of 6, are entitled not only to free medical services (as the entire population), but also to free drugs on prescription;
- the drug therapy of infertility is free of charge.

Along with the cited measures, labour legislation is constantly updated to assure better work conditions for the working women.

The changes in many health indicators confirm the success of this policy over the past 40 years. The most impressive evidence is the progressive reduction of infant mortality rates: from 140 per 1000 live births in 1944 to 16.1 per 1000 live births in 1984; 15.4 per 1000 live births in 1985; and 14.4 per 1000 live births (preliminary data) in 1986. In 1985 there were 1159 creches and kindergartens in the country for 72310 children (versus 537 creches and kindergartens for 33719 children in 1970). During the period 1960-1985 the number of children's and women's consulting services has increased from 1918 to 2425 and the coverage of children up to three years of age with creches has been expanded from 114 places per 1000 children to 196 places per 1000 children.

In spite of the positive results, there are still problems to be solved in order to further improve the maternal and child health indicators and bring them up to the level of the most advanced countries in this respect.

The importance of this task is underscored by the unfavour-

able demographic trend of the past decades towards a decrease in the natural growth rate of the population due to declining birth rates (from 24 per 100 in 1950 in 13.3 per 1000 in 1985). This phenomenon is related to a decrease in the proportion of women at fertile age and in the average fertility coefficient of the female population, from 91 per cent during the 1945-1948 period to 60 per cent in 1972. This decrease is not related to a change in biological fertility, but is primarily due to restricted actual fertility under the influence of social and cultural factors.

In order to compensate for the trend towards an aging population and a stationary type of reproduction, it is necessary to further reduce maternal and infant mortality rates, and to improve to the highest possible extent the levels of children's health and physical fitness.

The most important objective (set for the entire nation by the Thirteenth Congress of the Bulgarian Communist Party) is to *reduce infant mortality rates to less than 11 per 1000 live births by the year 1990, and to less than 9 per 1000 live birth by the year 2000, with a trend towards further decrease.*

The basic approaches towards the achievement of this objective are as follows:

1. *By the year 2000, the rate of newborns with low birth weight (less than 2500 g) should be reduced to under 6 per cent.*
2. *By the year 2000, the incidence of congenital malformations and anomalies, especially those relating to the neural tube and the cardiovascular system, should be reduced to 2.5 per 1000 live births.*
3. *Perinatal mortality from all causes should decrease from 12.3 per 1000 live births in 1985 to 11 per 1000 live births in 1990, and to less than 8 per 1000 live births in 2000.*
4. *A decrease in post-neonatal mortality rate (the mortality of live born children who die at an age from 1 month to 1 year) should be attained, from 7.1 per 1000 live births in 1985 to 5 per 1000 live births in 1990, and to less than 3.5 per 1000 live births in 2000.*
5. *The stillbirth rate should decrease from 6.6 per 1000 births in 1985 to 6 per 1000 births in 1990, and to less than 4 per 1000 births in 2000.*

But along with the achievement of the above-mentioned targets for the entire population, it is essential to eliminate or to reduce to a minimum the regional differences in infant mortality rates. For example, in 1985, infant mortality rate in the urban population was 14.0 per 1000 live births, while in the rural po-

pulation it was 18.4 per 1000 live births. In some cities and towns the infant mortality rate is already less than 10 per 1000 live births, while there are still rural regions with an infant mortality rate of more than 20 per 1000 live births. These differences necessitate the setting of the following objectives:

- *By the year 1990, the infant mortality rate in no region of the country should exceed the mean value of 16 per 1000 live births, and in any region, the rate for the rural population should not exceed the value of 19 per 1000 live births; by the year 2000, the corresponding values of these indices should be 14 and 16 per 1000 live births.*

In order to attain a high level of health and physical fitness of the young generation it is necessary to pursue a comprehensive strategy aiming at:

- a) the reduction to a minimum of the hazardous effect of risk factors during pregnancy and during the perinatal and postnatal period;
- b) the improvement in the quality and efficiency of health care provided to the pregnant women, mothers and children, and
- c) the further improvement and development of legislative, administrative and economic measures in support of maternity and child rearing.

The experience in many countries has shown that the main underlying cause of infant mortality is low birth weight (about two thirds of the children who die during their first year of life have a low birth weight, i. e. less than 2500 g). The following are the risk factors conducive to low birth weight: age of the mother either under 17 or over 35 years; previous record of miscarriages or stillbirths; alcohol use and smoking during pregnancy; unbalanced nutrition and malnutrition during pregnancy; low level of health education; and inadequate antenatal health care. The basic approaches towards the elimination of these risk factors and hence towards the further decrease in infant mortality rates are: to improve health education; promote the adoption of a healthy lifestyle; educate adolescents to prepare them for their future parental roles (already during their school years). Along these lines, it is necessary — *as early as 1990*, to expand the programme of studies in the senior school classes and more precisely the scope of the subject “Fundamentals of Health”, by allocating an adequate number of academic hours to the theme “We are preparing ourselves to become parents”. Other specific measures focusing on the girls, the young women and the pregnant women should

be introduced as part of the set of measures aiming at the promotion of healthy lifestyles. *By the year 1990, no less than 80 per cent, and by the year 2000, no less than 90 per cent of the pregnant women should be thoroughly familiar with the risk factors that may affect foetal and infant health.*

The full coverage (over 98-99 per cent) of pregnant women with women's consultations (in 1985 the number of women's consultation units was 2425) is an objective already attainable by 1990, proceeding from the present coverage of 93 per cent and the available qualified manpower: 1.7 specialists in obstetrics and gynecology, 3.9 pediatricians and 94.1 mid-level health workers per 10000 total population. In order to facilitate the attainment of comprehensive coverage, it is suggested that pregnant women are paid a part of the maternity grant in advance, i. e. if they register themselves early enough at the women's consultation unit and visit it regularly. By the year 1990 it should be possible to reduce the number of people served by one district specialist in obstetrics and gynecology to 15000 people (general population) and the number of children attended by one district pediatrician — to 800. Along with the improvement in general health care provided to pregnant women and newborns, during both the periods, till the end of 1990 and from 1991 to 2000, targeted programmes will be implemented as well, aiming at the restriction of specified risk factors:

- in cases of a history suggestive of an increased risk of congenital malformations, all pregnant women, and the families considering having a child, should have access to highly qualified specialists in genetic counselling;
- prenatal screening will be gradually introduced in order to detect congenital malformations of the neural tube and other anomalies; by using early detection methods and making preventive abortion available, it should be possible to decrease the incidence of certain congenital malformations such as spina bifida, anencephaly, microcephaly, etc. by as much as 50 per cent;
- in order to improve the quality of preventive care provided to women and children in rural areas, mobile teams of women's and children's consultations will be set up and deployed on a larger scale;
- by the year 1995, specialized diagnostic and therapeutic units, equipped with up-to-date devices should be set up at all the district hospitals in order to provide appropriate treatment of sterility or infertility; similarly, andrology consultations should be established.

The pediatric district, as an integral part of the primary health care system, will remain the basic organizational unit providing health care to children. However, along with the local pediatric team (district pediatrician, pediatric nurse), also other health services, medical workers and the community at large (through the local health commission) will be increasingly involved in child health care. In parallel to improving the skills of the pediatric team and upgrading its stability to provide comprehensive care, emphasis will be laid upon the provision of rapid social and epidemiological information on child health state, on risk factors, and on the trends in important health and social indicators. The microcomputers which are being widely introduced into the health care management will enable the carrying out of situation analyses and the choice of the preventive and therapeutic strategy on the pediatric district level. A key task along these lines will be the development and the implementation of computer programs for child health care capable of providing an efficient feedback on the local level.

The front line of pediatric care is supported by highly specialized consultative and therapeutic "back-up" services in pediatrics, obstetrics and gynecology. By the year 2000, it is foreseen to:

- establish interregional centres for intensive care of newborns with malformations and low birthweight which will be supplied with up-to-date diagnostic, therapeutic and transport equipment;
- set up within all the regional hospitals intensive care units for pregnant women, women in parturition, and newborns with malformation or low birthweight;
- organize centres of genetic counselling at the hospitals with interregional functions and the higher medical institutes (their tasks will include counselling, organizational and methodological support to screening programmes for prenatal detection of congenital anomalies and for postnatal detection of inborn thyroid hypofunction, phenylketonuria and other treatable dysfunctions; furthermore, the centres will provide consultation on sterility, infertility, medical sexology, child neurology, psychiatry, endocrinology, hematology, gynecology, etc.)

The third element of the comprehensive system of child health care is that of social and educational activities. At present, 196 per 1000 children under 3 years of age are covered by creches, but the quantitative aspect of this coverage is perhaps less important than the qualitative one. Now the efforts are directed towards

creating a more stimulating environment, reduction of health risks, the introduction of specific preventive programmes, achieving a higher level of physical fitness, and the cultivation of healthy lifestyles at an early age. The activity of the kindergartens will be directed along similar lines, with an emphasis on regular monitoring of health and development indices, close contact with the child health services of the general polyclinics, prevention, physical activity, and healthy psychosocial development. Such qualitative improvements will require a higher qualification of the personnel and an expansion of the staff to include psychologists, physical education trainers, etc.

Another important aspect of the promotion of child health is the provision of balanced nutrition. The *complete satisfaction* of the need for local baby food kitchens and for a wide range of children's foods, together with the attainment of a high level of hygienic and dietetic surveillance over food and nutrition in creches and kindergartens by the year 1990, have to become a national objective.

During the coming decade it will be important to solve two other problems that are of great social relevance.

The first problem is to secure early adoption or foster homes for the children of unmarried women who are unable to care for them. Along with the extension of the network of social welfare homes for single mothers and their children, and the improvement in the health and social conditions there, it is necessary to refine the system of adoption and of foster family rearing of children. The emotional bond between the child and its parents (or adoptive parents) is a basic prerequisite to normal psychosocial development and to the prevention of behavioural disorders, delinquency, alcoholism and drug abuse in adolescence. *By the year 2000, the proportion of parentless children, who are adopted or placed with foster families after a stay in an institution of no more than one year, should increase to 85-90 per cent.* With that aim in view, it is necessary to establish specialized adoption services at an interregional level with the participation of pediatricians, psychologists, social workers and jurists, and with active community involvement.

The second problem is to improve significantly the quality of medical, social and educational care provided to *children with congenital or acquired malformations and disorders*. Improving the qualification of teachers and educators, as well as widening of the network of services for handicapped children, will enable an earlier and more accurate diagnosis and assessment of functional abilities. This is a prerequisite to the adequate education and

rehabilitation aiming at a significant decrease in the number of handicapped children who are considered uneducable and are referred to social welfare homes.

The school health service is also in need of further development and improvement. The new tasks assigned to schoolchildren — the extended vocational training and practice, the lower age of school entrance (6 years), the all-day-long studies in case of five-day school week, and the greater information load of the programmes of study, require new approaches to the prevention of diseases and to the promotion of the physical and mental health of schoolchildren.

The main problem is how to achieve an acceptable balance between mental work and physical activity of schoolchildren. It will be possible to solve this problem only with the joint efforts of the Ministry of Health and the Ministry of Education, with active community involvement. The school physician has to become the co-ordinator of the joint efforts of school authorities, trustees and parents towards better school environment, rational school routine and efficient preventive and sanitary measures. Furthermore, the physician is a health educator and a promoter of a healthy lifestyle among schoolchildren; the organizer of the courses on "Fundamentals of Health", and the adviser to schoolchildren and their parents on any matters related to child health, hygiene, and prevention.

8.

PREVENTION AND CONTROL OF SOCIALLY SIGNIFICANT DISEASES AND RELATED HEALTH PROBLEMS

In Bulgaria, as in many other countries with advanced industrialization and urbanization, the largest proportion of general mortality, morbidity and disability is accounted for by a few groups of diseases: cardiovascular disorders, malignant neoplasms, chronic respiratory diseases, injuries, diabetes mellitus and mental disorders. In 1985, over 88 per cent of all deaths, 71 per cent of all cases of chronic disability, and 50 per cent of all cases of temporary disablement in the country were caused by these diseases. Considering the severity of the burden that these diseases impose on the nation, they are justifiably referred to as *socially significant diseases*, i. e. they have an impact on the entire society, and society has to be involved in all the measures aiming at their

prevention and control. At present, the prevention and control of socially significant diseases are considered a priority but, of course, this statement does not imply that other morbid conditions are of no importance to the society.

The first important characteristic of these disease is that multiple factors determine their onset and course. Along with genetic factors, environmental conditions, lifestyles and behaviour play a significant role in their pathogenesis.

The second characteristic feature of this group of diseases is that a relatively small number of environmental and behavioural variables explain a large proportion of the risk of their occurrence; these are the so-called *risk factors*. Consequently, the identification of the risk factors and the elimination or attenuation of their impact is the key to individual and population-wide prevention. Among the risk factors that are common to all of the socially significant diseases, the most important ones are: smoking, physical inactivity, alcohol abuse, unbalanced nutrition and obesity, environmental pollution, hazardous conditions of work, living and transportation, chronic stress, and the low level of health education and knowledge.

The third characteristic of the socially significant diseases is that specific medical, behavioural, and social measures are required at the different stages of their development. The best measure across the board is *primary prevention*, i. e. averting the onset of the disease; in a considerable proportion of cases early detection and treatment aiming at the prevention of further progression (secondary prevention) is also a possible solution; and in a third subset of cases it will be necessary to provide treatment and rehabilitation at the advanced stages of the disease. This complexity explains why the control of socially significant diseases requires a comprehensive approach as well as continuity, interrelation and co-ordination of preventive, therapeutic and rehabilitative measures.

In spite of the rapid advances in research, and the understanding of the mechanisms of many of these diseases on molecular and submolecular level, the three basic characteristics of this group of health problems will probably remain unchanged at least till the end of this century. Consequently, the above characteristics will be of utmost importance to the appropriate choice of the strategy for the prevention of the socially significant diseases, for the reduction of their incidence, and for the restriction of their adverse consequences.

On the basis of all these considerations, a *National Programme for the Prevention and Control of Socially Significant Disease* in

Bulgaria has been recently developed and adopted. Its objective is "to reduce morbidity, disability and mortality from these diseases, in accordance with the best achievements in the world, and to restrict their adverse health, social, economic, demographic and psychological effects by means of comprehensive prevention measures, control of health hazards and risk factors, promotion of a healthy style of life, and improvement in the quality of health care".

The Programme is based on the assumption that the prevention and control of socially significant diseases is not only a medical objective but also a task for society as a whole. It is therefore foreseen — within its framework — to establish "a united front integrating the efforts of the state, of economic and social organizations, which in turn have to adopt the prevention and control of socially significant diseases as their basic responsibility".

An important aim of the Programme is to overcome the existing disparities in the incidence of socially significant diseases between population groups, and particularly between the rural and the urban population. Due to selective migration, the proportion of the elderly, and of the chronically ill in the rural population has been increasing during the past decade. Owing to this, age-specific mortality from cardiovascular, neoplastic, gastrointestinal and some other diseases is significantly higher among the rural population as compared to the urban population. This means that special efforts will be needed to improve the health state of the rural population and to bring it up to the level of health of the urban population.

Cardiovascular diseases

Until the year 2000, the efforts will be directed chiefly towards the prevention and control of two diseases that are at the top of cause-specific mortality, incidence and prevalence: ischaemic heart disease (IHD) and cerebrovascular disease (CVD). In 1985, the total number of Bulgarians (all age groups) who died from IHD was 22 375 (a mortality rate of 249.9 per 100 000 total population), and the number of deaths due to stroke was 23 628 (a mortality rate of 263.8 per 100 000 total population). Although the mortality rate from myocardial infarction (absolute value) is lower in Bulgaria than in other developed countries, the trend of rapid increase, which has been observed during the last decade, and especially among men in the age-groups 40-59 and over 70, is causing great concern. The causes underlying this unfavourable trend need to be elucidated by research.

In only a small proportion of the population the atherosclerosis of the coronary vessels is caused by familial predisposition (hereditary hyperlipidaemia) or by untreated primary diseases (such as diabetes mellitus). In the vast majority of cases the risk factors for the disease include the unhealthy lifestyles, i. e. inadequate physical activity; unbalanced nutrition accompanied by obesity and unfavourable cholesterol/lipoproteins ratio in the blood; smoking; alcohol consumption; and psychological stress.

Special attention has to be paid to the excessive mortality from stroke, especially in the 55-64 age-groups. Along with the risk factors described above, cerebrovascular disease is also associated with arterial hypertension. Especially important are the undetected and hence untreated cases of hypertension, as well as the so-called mild hypertension (diastolic pressure of 90-104 mm Hg), particularly in men of productive age, who are less prone than women to check their blood pressure. Another factor is the high salt content of the food, i. e. the proportion of the population that prefers salted food; this proportion is relatively high in Bulgaria.

Proceeding from the experience of many countries and from the findings of research carried out in Bulgaria, we can assume that the objective to *reduce significantly* the morbidity and mortality from IHD and CVD in the Bulgarian people is realistic and attainable. *The national objective is by the year 2000 to achieve a decrease in the mortality rate from ischaemic heart disease of 24 per cent as compared to 1985, i. e. to reduce it to 190 per 100 000 total population (all age-groups) and to 66 per 100 000 total population for the age-groups 45-54; and to decrease the mortality rate from cerebrovascular disease by 30.2 per cent compared to 1985, i. e. to reduce it to 184 per 100 000 total population.*

It will only be possible to achieve these objectives, if the entire set of legislative, social and medical measures, outlined in the Programme for the Prevention and Control of the Socially Significant Diseases, are successfully carried out. They imply a restriction of the hazardous effects of the risk factors relating to living conditions, the occupational and natural environment; promotion of balanced nutrition on a nation-wide scale; extension of health education; and adoption and maintenance of healthy lifestyles by the majority of the people. The strategy for the prevention and control of IHD and CVD will make use of three principal approaches. The first and basic one is *the population approach* to prevention. It is based on the assumption that the elimination or restriction of the risk factor through the *mass adoption of a healthier lifestyle* will result in a decrease in the incidence, preval-

ence and mortality rates for these diseases, after a latent period of several years. The second approach, which is supplementary to the first one, consists in the early detection, active care and follow-up, and treatment of the persons *at extremely high risk*, i. e. the persons with hypertension, hyperlipidaemia, and diabetes mellitus. The third approach is the improvement in the coverage and efficiency of therapeutic and rehabilitative care in the case of already present IHD and CVD.

The early detection and treatment of hypertension, hyperlipidaemia, and diabetes mellitus is a comprehensive task. Its successful solution requires the joint efforts of the health workers in the primary health care system (out-patient and polyclinical services) and the health educators and promoters. Along with mass screening at the workplace, it is essential to persuade the people that regular control of blood pressure is indispensable and that it is advisable to use every visit to a health service, irrespective of the reason for the visit, for having one's blood pressure checked. Equally important is the periodic control of the serum lipids and carbohydrate metabolism. The health worker has to combine these investigations with scientifically sound counselling and, if necessary, with a prescription of appropriate drug treatment. The criteria by which the effects of health education will be assessed will be the results of population questionnaire surveys, e. g. proportion of individuals who can enumerate the chief risk factors of IHD and CVD; the proportion of individuals who know the value of their blood pressure (and have checked it during the past three months), and the cholesterol content of their blood (examined during the past year). By 1995, no less than 50 per cent of the families in the country should be provided with the facility of checking their blood pressure at home.

All the individuals with arterial hypertension, hyperlipidaemia and diabetes mellitus will be offered dispensary care, (i. e. active medical follow-up). The organization and the quality of this important type of health care have to be significantly improved during 1987-1990.

Along with the preventive system, also the system for early detection and treatment of IHD and CVD will be upgraded. During 1987 and 1988, computerized case registers of myocardial infarction and stroke will be set up in four regions. In such a way the coverage of these patients and the monitoring of the quality of follow-up and treatment will be improved. From 1988 the drugs required for home treatment of hypertension will be available free of charge on prescription. All these measures will aim to decrease the prevalence of hypertension for the age-groups

from 7 to 64 years down to 10 per cent by the year 1990, and to 75 per cent by the year 2000.

As a further step in the collaboration between the World Health Organization and the People's Republic of Bulgaria, a Co-operative Agreement for the Implementation of a Long-Term Integrated Programme for the Prevention and Control of Noncommunicable Diseases was signed in 1984. Within the framework of this Programme, new methods, technologies and organizational patterns of noncommunicable diseases prevention and control have been introduced in one region of the country comprising four provinces with a total population of 1 200 000. One of the first measures was the target screening of the population between 7 and 65 years of age in order to detect risk factors (unbalanced nutrition, physical inactivity and other unhealthy lifestyles) and cases of hypertension and overweight. By 1986 a total of 711 000 people have been screened. Initial data processing has revealed a high prevalence of hypertension and overweight (13.6 per cent of the screened population). It has been found that 8.5 per cent of the Bulgarians prefer food which is salted in excess, and that 60 per cent are not engaged in any regular physical activity. Mean values of blood pressure and data on the distribution of the risk factors have been obtained as well. The district physicians have been given the computer printouts of the data in order to enable them to focus their work on the risk factors, specific for each patient. This "personalization" of the risk factors will help not only the individual but also the community-based preventive measures. Along with systematic treatment, it will be of great importance to ensure the the secondary prevention of cardiovascular accidents. The regular follow-up of the blood pressure values carried out at numerous communal clubs for blood pressure control (organized outside the health care system by the Bulgarian Red Cross) will provide additional support to secondary prevention. The experience gained in the four-district region and the improved quality of health education and community-based preventive measures set a pilot example for future work on the prevention and control of socially significant diseases.

Malignant neoplasms

With a mortality rate of 164.9 per 100 000 total population (1985) malignant neoplasms rank second among the main causes of death in the entire population (all age-groups); and with a mortality rate of 384 per 100 000 total population are the lead-

ing cause of death for the age-groups over 55 years. As in many other developed countries, the site-specific distribution of cancers in Bulgaria reveals an upward trend in the frequency of some cancer sites and constancy or a downward trend in the frequency of other cancer localisations. The trend towards an increase is most evident in the cases of cancer of the bronchi and the lungs; the stomach; the large intestine and the rectum; the breast (the mammary gland); and the female genitals.

On the basis of estimates provided by the World Health Organization, it is assumed that over 30 per cent of the deaths from neoplastic diseases are due to preventable causes related to the environment and the lifestyle. Smoking ranks first among these causes and accounts for one-fourth of all cancer deaths. Along with the proven causal relationship between smoking and cancer of the lungs, the larynx and the oral cavity, it is suggested that such a relationship may also exist for the cancer of the oesophagus, the pancreas, and the bladder.

The second external and principally avoidable factor of carcinogenesis is environmental pollution with industrial waste and chemical occupational hazards.

The third avoidable risk factor of malignant neoplasms is the unnecessary irradiation by poorly motivated repeated X-ray examinations. X-ray exams must be prescribed only on the basis of precise indications, making use of up-to-date equipment that reduces to a minimum the radiation dose.

The strategy of the Programme for the Prevention and Control of Socially Significant Diseases is based on the assumption that the integrated measures aiming at environmental sanitation and promotion of a healthy lifestyle with a view to decreasing the incidence of cardiovascular diseases, will have equally important impact on the incidence of malignant neoplasms. Of course, in cancer control, the set of general preventive measures will be supplemented with some specific measures relating to particular types of cancer.

Research has demonstrated the role of a variety of other environmental factors in the genesis of the most common cancer types and sites. It is probable that new causative agents will be disclosed in the near future. It is already well known that, for example, viral hepatitis plays a role in the aetiology of liver cancer; therefore, it will be necessary to introduce hepatitis B vaccination on a nation-wide scale. Other viruses may also have a carcinogenic effect. That is the reason why the strategy for primary prevention of cancer through environmental sanitation and promotion of healthy lifestyles has to remain an open system, flexible enough to include new elements, when necessary.

Early detection of malignant neoplasms, especially of those that can be successfully treated, is an approach comparable to primary prevention as regards its importance and effectiveness. For example, it is already known that regular mass screening and early detection of cervical carcinoma can reduce the mortality from this neoplasm by 40 to 50 per cent. Promising results have been also obtained in breast cancer. It is expected that the implementation of this strategy will result by the year 2000 in a decrease in the cancer mortality rate of about 16 per cent as compared to 1985, i. e. will be reduced to 138 per 100000 total population (all age-groups).

Respiratory diseases

With a mortality rate of 92.3 per 100 000 total population, respiratory diseases account for about 45 per cent of registered disease prevalence and thus rank among the most important morbid conditions from a social point of view. A large proportion of them are chronic conditions (such as emphysema, chronic bronchitis and pneumoconiosis) which lead to severe dysfunction and chronic disability.

The cases of respiratory diseases are also related to lifestyle and environmental conditions, including smoking, occupational hazards such as air pollution with toxic gases and aerosols, dust, etc.

It can be expected that the successful implementation of measures aimed at environmental protection and sanitation, and the promotion of healthy lifestyles, will result in a decrease by the year 2000 of the prevalence and mortality of respiratory diseases by about 25-30 per cent as compared to 1985.

Accidents and injuries

As a result of industrialization, mechanization, and the intensive use of chemicals in agriculture; and as a consequence of the rapid increase in the number of motor vehicles, accidents and injuries now rank among the leading causes of death and of temporary and permanent disability. In 1985 the mortality rate from accidents and injuries in Bulgaria was 63.5 per 100 000 total population. By contrast to cardiovascular and cancer mortality rates, mortality of accidents and injuries shows no significant relation to age. The relatively high incidence of accidents and injuri-

es among the young, and the consequent high rate of long-term disability, determine their social importance. Here again the role of avoidable risk factors is evident. If the various public sectors and organizations, and the state institutions co-ordinate their efforts, it should be possible to bring down to a minimum the impact of these risk factors.

Within the framework of the strategy, priority will be given to the obligation of the management of economic enterprises and {of} the trade unions to work out measures aiming at the prevention of occupational accidents, as well as at the attainment of a higher level of work safety, technological and work discipline. The Central Commission on Road Safety will intensify its function aiming to increase the skills and responsibility of all the participants in the road traffic. Special attention will be given to the familiarization of children and the elderly with the traffic code, to the obligatory use of helmets or seat-belts, and to the learning by the entire population of the basic principles of first aid in case of accidents.

The system for emergency medical care plays an important role in the control of the consequences of accidents and injuries. It is organized on a territorial or industrial principle, and its basic unit is the emergency care team which is trained to take independent action. The objective is to ensure the arrival of the emergency care team at the site of an accident within no more than 15-20 minutes after the emergency call.

It is planned to set up a separate first aid unit with branch stations for each district with a population over 200 000. Departments for emergency care will be established with all the regional and provincial hospitals that serve a population of over 70 000, and emergency care units — with the district hospitals serving a population of less than 70 000. Emergency care teams will be attached to the polyclinics.

The number of general and specialized (cardiologic, traumatologic, neurologic, etc.) emergency care teams will be increased, and specialized means of transport, equipped with life-saving appliances and portable diagnostic devices will be provided.

Mental disorders and reactions to psychosocial stress

The concern for the protection and promotion of mental health and for the reduction of the impact of stressors associated with the contemporary patterns of life, work and social relations, is in the focus of the health and social policy of Bulgaria,

in parallel with the pursuit of humanization of social relations and the provision of conditions for a harmonious development and self-realization of the person as the pivot of the social, economic and cultural advance of the socialist society.

The incidence and prevalence of mental disorders in Bulgaria are not significantly different from those observed in other countries of comparable demographic, social and economic characteristics. About 1 per cent of the total population (all age-groups) is in need of therapeutic and rehabilitative care because of chronic or recurrent mental disorders. However, the frequency of episodic or transient mental disorders such as depressions and neuroses is much higher. The causative or contributory role of psychosocial stress in their onset has been demonstrated. The demographic aging of the population and the increasing number of elderly people tend to increase the absolute number of the individuals suffering from various degrees of cognitive and behavioural impairments.

Another issue of special concern is the nature and frequency of disturbances in the psychosocial development of children at preschool and school age. According to recent findings, between 5 and 10 per cent of the children in these age-groups experience problems relating to learning capacity and emotional development. Their early detection and management through psychological, paedagogic, and medical measures is a prerequisite to the prevention of their further aggravation.

The general educational measures aiming at the adoption and maintenance of a healthy lifestyle will have a positive effect on the self-esteem and the positive mental health of the majority of the population. But they will have to be complemented by specific educational and social measures in order to cultivate social skills, especially within the family, as a prerequisite to mental health. It has been demonstrated that the emotional bond between the child and his parents (or surrogates) during the first several years of life is a basic prerequisite to normal psychosocial development. This is why the provision of a harmonious and stimulating family environment to every child is the key to the mental health of the younger generation and to the prevention of mental and behavioural disorders, including delinquency, alcohol- and drugs-related problems.

In the coming decade primary prevention will be directed towards the early detection of congenital malformations of the nervous system (most of them arising during the first trimester of gestation); on inborn sensory defects such as deafness, that are conducive to educational retardation but can be corrected

by microsurgical interventions during the first year of life; of in-born errors of metabolism leading to an impairment of the nervous system; and of nervous and mental disorders caused by environmental toxic hazards (e. g. lead) or viral infections (e. g. rubella or measles). The setting up of a national system for early detection and correction of congenital anomalies is a realistic objective. If such measures are implemented, it will become possible *to reduce by the year 2000 the incidence of congenital malformations by 50 per cent as compared with the current rate (1985).*

Secondary prevention of mental health problems will be predominantly directed towards the most common disorders, associated with significant subjective distress and disability, such as depression and anxiety. The available pharmacological and psychotherapeutic methods enable the efficient treatment of these conditions on an outpatient basis.

The pathogenetic effects of stress and severe personal crises are not restricted to the mental functions and the psychosocial adjustment of the individual. Prolonged states of chronic distress may lower the immune barrier and hence lead to a higher risk of various physical illnesses. For this reason, the timely drug and psychosocial treatment of these conditions (which can be provided and managed by general practitioners) has a significant positive effect on the overall health state of the individual. In the coming 10-15 years the key objective will be the integration of mental health care within the frontline of health care and the upgrading of the role of the district health team in the protection and promotion of mental health. A specific task along these lines will be the training of general practitioners in mental health skills and simple psychosocial counselling as basic approaches of public health and especially of primary health care.

During the decade to come one can expect the arrival of new methods and technologies that probably will enable the prevention of some forms of dementia, other degenerative brain disorders and age-related skills deterioration. New prospects may open before the treatment of disabling illness such as schizophrenia, affective psychosis and mental disorders associated with cerebral injuries and toxic or infectious brain damage.

In the coming years advances in the prevention of mental disorders will be supported by the strong research basis set up by the Programme for Interdisciplinary Studies of Man and His Brain, as well as by the WHO Collaborating Centre for Research and Training in Mental Health which has been designated at the Institute of Neurology, Psychiatry and Neurosurgery of the Medical Academy.

Prevention and control of infectious diseases

In spite of the relatively low incidence of infectious diseases in Bulgaria, which are no longer among the most important diseases from a social point of view, they still present a health hazard.

In the past decades, due to the social policy pursued in the country and to scientific advance, infectious and parasitic diseases have been effectively brought under control.

During 1981-1985 the incidence of all infectious diseases (excluding influenza and acute respiratory diseases) has been decreased by 21.9 per cent; the incidence of infectious intestinal diseases by 31.6 per cent; and the incidence of infectious respiratory diseases by 16.8 per cent, as compared with the previous five-year period (1976-1980).

During 1981-1985 the mortality rate of infectious diseases has been reduced by 31.5 per cent and lethality by 10 per cent, as compared with the previous five-year period (1976-1980).

These results were obtained due to the adequate strategy for the prevention and control of infectious diseases, which took into consideration both the national conditions and world achievements. A qualitative improvement in the diagnosis and treatment of severe infectious diseases, as well as in the production of vaccines, sera and immunoglobulins, has been achieved. Epidemiological control, carried out by the entire health care system and monitored by the hygiene and epidemiological inspectorates, has been upgraded as well.

In spite of the continuous seventh cholera pandemic, no cases of the disease have been registered in Bulgaria. Diphtheria, poliomyelitis, typhus and rabies have been eradicated. Only isolated cases of tetanus, anthrax, haemorrhagic fever, leptospirosis, botulism, typhoid fever and paratyphoid fever have been reported in the country. In 1985, the number of cases of tetanus for the whole country was 12 and in 1986 — only five.

Due to the full coverage of the population with measles vaccination, in 1981-1985 measles incidence has decreased by 62.4 per cent as compared with the previous five-year period (1976-1980).

During 1981-1985, the putting into effect of a comprehensive set of measures has resulted in a significant decrease in the incidence of infectious intestinal diseases. As compared with the previous five-year period, their incidence has dropped: for shigellosis — by 40.4 per cent; for enterocolitis by 53.0 per cent; for salmonellosis — by 12.6 per cent; and for colenteritis by 34.2

per cent (in the case of the latter, morbidity has decreased fourfold and lethality — threefold).

During the same period (1981-1985) the incidence of viral hepatitis A has increased by 35 per cent (as compared with the previous five-year period) due to an epidemic burst which started in 1982 but was contained by 1985. The incidence of viral hepatitis B has shown a downward trend as a result of the improved control over donated blood and the more efficient sterilization introduced into medical practice.

Three diseases: scarlet fever, rubella and varicella account for about 60 per cent of infectious morbidity in Bulgaria and show specific cyclic bursts in their incidence. Within the National Programme for the Prevention and Control of Rubella it is foreseen first to eradicate congenital rubella and then to cover gradually with appropriate preventive measures (immunisation) the remaining population groups in order to eradicate the disease.

Due to the contemporary diagnostic and therapeutic methods applied, the incidence rate of meningococcal infection is low but the lethality rate is still relatively high.

Although the incidence of hospital infections remains constant, it is lower than the rates registered in other countries.

In order to avert the threat of AIDS, a comprehensive programme is in progress. It includes the following preventive measures:

- the acquaintance of all health workers with the nature of the disease and with the methods of its prevention and control on the basis of carefully designed methodological guidelines;
- education of the population about the nature of the disease, and its transmission, and adoption of measures to increase public awareness;
- the introduction of screening and diagnostic methods and technologies;
- the carrying out of regular serologic examinations aiming at the detection of AIDS-related infections among the population groups at risk;
- the reduction of the risk of AIDS transmission through inactivation of the virus in factor VIII-IX preparations;
- all-embracing control over donated blood applying the ELISA method, and exclusion from blood donating of individuals suspected to be at a high risk of the infection.

9.

BIOMEDICAL SCIENCE AND TECHNOLOGY: A PREREQUISITE FOR ACHIEVING HEALTH FOR ALL

A determining factor in the process of profound reorganization carried out at present in the social and economic structure and the system of social management in the People's Republic of Bulgaria is the scientific and technical revolution. A number of party and state forums and resolutions have outlined in recent years the principal objectives for the development of research, the introduction of new technologies, and the implementation of avant-garde achievements of the scientific and technical progress as the basis for further growth of a mature socialist society. During the Plenum of the Central Committee of the Bulgarian Communist Party held in 1985, the General Secretary of the Party and the President of the State Council of the People's Republic of Bulgaria T. Zhivkov underlined that "our country has already at its disposal a developed industrial, scientific and technical potential. This enables us not only to take advantage of the achievements of the scientific and technical revolution, but also to participate in its realization."

Such a potential also is available in the sciences directly supporting the health services. Its role will be of decisive importance in the strategy for attaining Health for All. The organizational reconstruction in the field of science — orientation towards selective strategies of research and development, programme-based organization of the research teams and institutions, self government and economic approach — characterize the modern stage of development of biomedical sciences in Bulgaria and particularly the activity of the Medical Academy. The latter represents a powerful scientific research and training complex incorporating 5 higher medical institutes, 24 research institutes, centres and clinics with a total number of 9200 beds, approximately about 16 000 research, teaching and other staff, with its own production units and an Economic Department with broad internal and external trade relations.

Among the recent research projects of the Medical Academy the following could be mentioned:

- development of new technologies for the production of diphtheria, whooping-cough, cholera and typhus vaccines, as well as tetanus anatoxin;

- production of leucocyte interferon, antibacterial and antiviral monoclonal antibodies; a hybridoma cellular line establish-

ed for the production of an antibody specific for human gonadotropine;

- development of new antitumour nitro-urea and platinum preparations, as well as a range of new drugs and diagnostic methods (for example two-dimensional echocardiography, immunodiffusion methods for identifying glucoproteins, methods for determination of blocking antibodies);

- development of transplantation surgery (3 heart transplantations accomplished up to 1987, and heart-lung and liver transplantations in prospect);

- leading participation in the innovative interdisciplinary programme for research on brain and behaviour (this programme encompasses, for example, studies on mental health and development of more than 5000 Bulgarian children; research on precursors of cerebro-vascular disease, employing state-of-art methods and equipment for measuring the regional cerebral blood flow; development of psychosocial interventions at the level of primary health care).

The Medical Academy also carries out international co-operation on a large scale, including joint projects with institutes of the USSR and other socialist countries, with the National Institutes of Health in the USA, with institutions and organizations in Austria, France, FRG, Greece etc. Ten institutes of the Medical Academy take part in the WHO European Medium-term Programme, and 3 institutes of the Medical Academy have been designated WHO Collaborating Centres.

The general aim of health research, and of the development of new technologies, during the following 10-15 years will be to ensure the scientific back-up to the Bulgarian strategy for attaining Health for All. This presupposes a priority development of those branches and trends of science which will: a) guarantee the development and implementation of technologies directly serving the programmes for promotion of healthy lifestyles, control of the socially significant diseases, health protection of children and adolescents, environmental protection, and raising the quality and accessibility of health and social care; b) increase knowledge about the patterns and trends of morbidity and health in the community, with a view to making predictions, identifying needs, and improving health care management.

The first group of scientific trends and developments are related to research of a fundamental character (molecular biology, genetics, immunology), and to biotechnologies as a bridge towards implementation of scientific achievements in health practice: examples are hybridoma technologies for obtaining monoclon-

al antibodies and their application in diagnosis and therapy (for example in the hemolytic disease of the newborn); using recombinant DNA for making new vaccines; producing human insulin, other hormones and interferon by genetic engineering, etc.

Here are also to be mentioned new express tests and low-cost methods for the health evaluation of the ecosphere and the work environment; new health-promotion methods and techniques based on concepts of social psychology; behavioural medicine aiming at affecting the lifestyle and eliminating the risk factors related to behaviour; improving the technologies for mass screening of the population with regard to risk factors, and for detection of preclinical stages of the socially significant diseases; new diagnostic and therapeutic technologies, designed for staff in the front line of primary health care (instruments, portable diagnostic equipment based on integrated circuits, other laboratory tools); the production of all essential drugs, necessary for the effective treatment of the common diseases.

The second group of research developments will comprise: the epidemiology of noncommunicable diseases as groundwork and information basis for the control of socially significant diseases; elaboration of mathematical and statistical models for the study of morbidity and for predicting the "behaviour" of diseases in response to alternative approaches to alternative approaches to their prevention and treatment; further improvement of the system for collecting, processing and analysing health data, social and ecological information; use of computers on a wider scale, including the establishment of local and regional networks of personal computers and terminals in the health services; developing "intelligent" diagnostic and consultative expert systems to aid health workers and managers in decision-making; and improvement of the methods of planning and evaluation of the effectiveness of health interventions;

This wide spectrum of indispensable research will be organized in four thematic programmes, involving the participation of different institutes and centres of the Medical Academy, the higher medical institutes and other scientific institutions, within or outside the health system.

1. Health system research and development of new forms and management. Examples of projects, which will be incorporated in this programme are:

— Testing and evaluating new approaches to, and models of, organization of primary health care: effectiveness of varying ratios between number of the health district; new forms of outpatient polyclinic service (for example, establishment of "mini"-

polyclinics with 2-3 doctors qualified in general medicine, and affiliated to the respective district or regional hospital); organization of preventive work in the district on the basis of the integrated family health record);

- Testing and evaluating economic and other mechanisms for improving the cost-effectiveness of the health services and providing additional incentives to the work of the health personnel, e.g. a system of measures to promote postgraduate education of doctors qualified in general medicine, measures to raise the social prestige and increase the attractiveness of the nursing profession, etc.;

- Evaluation of the feasibility of alternative methods and forms of health education and of their impact on lifestyle: role modelling, elimination of the so-called cognitive dissonance in health education, a mandatory "minute on lifestyle" during each out-patient examination.

2. Epidemiological analysis and mapping of the incidence of socially significant diseases. Examples:

- Preparing a national atlas of neoplasm morbidity with a view to identifying cause-related regional variations and ecological factors;

- Preparing a national case register of myocardial infarction, to enable epidemiological analysis and evaluation of the effectiveness of prevention, therapy and rehabilitation;

- Representative epidemiological study of morbidity and mortality of cerebro-vascular disease and stroke; clarifying its relative contribution to the etiology of the ischemic heart disease;

- Epidemiological analysis of infant mortality, using advanced mathematical models for elucidating the relative contributions of different factors and its prognosis;

- Prevalence, clinical manifestations, occupational and social prognosis of the main groups of mental diseases — a representative study;

- Epidemiology of normal and pathological aging, including Alzheimer's disease and other dementias of middle and old age; prognosis of needs for mental health care in the process of demographic aging of the population;

- Clinical and epidemiological analysis of infertility on the basis of representative data for the whole country;

- Population studies of the incidence of congenital anomalies and of the risk factors related to them.

3. Relative contributions of, and interactions between lifestyle and biological factors in the etiology and course of the socially significant diseases.

Examples of projects which will be carried out in this programme:

- Social determination of the risk behaviour in adolescence: tobacco smoking, alcohol abuse, injuries, sexual risk behaviour.

- Demographic, social and psychological characteristics of individuals "avoiding" mass screening, as well as of persons with unusually high or unusually low frequency of contacts with the health services.

- Ecology of the urban environment, and studies of housing and the urban way of life from a health risk point of view.

- The stress factor in the workplace and its relation to the temporary incapacitation for work and the health status of the workers collectives.

- Biological, social and psychological characteristics of people who do not fall ill (i. e. the "super-healthy").

4. New technologies for prevention and control of the socially significant diseases. Examples of projects:

- Comparative evaluation of pharmacological and nonpharmacological methods for mild hypertension control.

- Development and clinical testing of new pharmacological agents for hypercholesterolemia control.

- Development of technologies for production of viral hepatitis B vaccine.

- Development of a system of programmes for psychosocial interventions at the level of primary health care and evaluation of their effectiveness in the prevention of family crisis situations.

- Elaboration of new behavioural methods for overcoming the tobacco habit.

- Evaluation of computerized expert systems for consultation and decision-making in primary health care.

In order to realize the above mentioned complex of studies, programme teams will be formed and a new system of planning, financing and reporting on research will be developed. This system will utilize the experience of the existing Programme for Interdisciplinary Studies of Man and his Brain, as well as other relevant experience of scientific organization in this country and elsewhere. Of priority importance will be the accelerated development of those research where Bulgaria still lags behind, as compared to the 'state-of-art' — for example the methodology for epidemiological study of disease processes, their modelling and prognosis based on advanced statistical and mathematical methods.

The elaboration in details of the proposed research programmes in support of Health for All, the setting up of research,

teams and the development of mechanisms of management and financing of this research will be completed by the beginning of the year 1990.

10.

IMPROVING THE ORGANIZATION AND MANAGEMENT OF HEALTH CARE

The further development of public health in Bulgaria will require certain decisive improvements of the organization and the system of management of health care. The new requirements arise naturally in the course of construction of a mature socialist society.

Joint management of the health services by the state and the community

In 1986, three new intersectoral councils were established at the level of the Council of Ministers of the People's Republic of Bulgaria: for economic, social and intellectual development respectively. Membership of each council includes responsible representatives of different ministries and other Government departments, economic and social organizations, scientific and higher educational institutions. The purpose of this reorganization of the Government was to overcome the narrow departmental approach to management and to integrate the resources of different sectors for the attainment of major national goals.

The implementation of the party and state health policy, formulated with a view to ensuring the highest possible level of health of the nation that would enable people to develop fully their productivity, attain high standards of living, and enjoy a healthy living and working environment, is a function of the Social Council.

With regard to health, the tasks of the Social Council include:

- coordination of national strategies for the attainment of major policy objectives of the party and state in the field of health and social development;

- endorsement and supervision of programmes and plans for expanding and strengthening the relations between health, physical culture and sports, leisure activities, and the like;

— policy guidance to all state, economic and other agencies and organizations aiming to improve the social and economic productivity of the people and to provide optimal conditions for the development of their physical and intellectual potentials;

— promotion and stimulation of health-related initiatives of the population, such as nationwide campaigns for healthy lifestyle and protection of the environment, improving the hygiene of the settlements and industrial enterprises, involving the communities in the planning and organization of public services;

— adoption and implementation of measures for the restriction or elimination of environmental risk factors that may affect people's health and vitality;

— coordination of the implementation of demographic policies, including incentives towards increasing the national birth-rate, as well as solving relevant social problems (such as housing) that may interfere with the reproductive behaviour of young families;

— development of measures to improve the quality of life of the elderly;

— supervision and steering of the processes of within-country migration, with a view to optimizing the distribution of the population and resources on the territory of the country;

— coordination of the use and optimal deployment of all the material and technical resources, staff and scientific expertise, available for achieving advances in the health sphere, regardless of their institutional subordination.

Participation of the community in the management of health care and services at the level of the district or the municipality is ensured through the social councils which are established at the district and municipality organs of self-government, i. e. the People's Councils.

The management of the health centres, or "health workshops", within industrial enterprises is also put on a joint state-community basis. With the assistance of the management, the Agency for Work, Safety, the sports organizations, the trade unions, and the medical services, have to find effective solutions to all problems related to the health status and working capacity of the population.

Strengthening the role of the Ministry of Health

The entire managerial activity of the Ministry of Health is directed towards achieving full population coverage, high quality and effectiveness in all areas and at all levels of the health care system.

The goal of raising the effectiveness of health care will be attained mainly by an accelerated introduction of advanced scientific and technical achievements, by improvements in the organization of work, by the application of economic approaches and mechanisms for the rational use of all health resources, available to the state and the community.

The management process needs to be improved in all of its basic ingredients: prediction, planning, ensuring effective feedback information, and evaluation. In the sphere of management a special emphasis will be put on the anticipatory function of scientific prediction, e. g. with regard to: expected changes in the health status of the population, its age structure, occupational groups etc.; the intensity and structure of the health needs; health-related factors and processes stemming from the social and economic development of the country.

The planning of health programmes and services will be improved to better match the demands and expectations of the population, and at the same time, to make optimum of the existing human material, and finance resources for achieving maximum effect. This will require, in particular:

- a wider introduction of management by programme objectives, to ensure a tight binding of the health resources to the planned activities of the health services network and to explicit goals and targets, thus closing the cycle consisting of planning of resources, programme activities, and final results.

- acceleration of the wide-scale implementation of scientific and technical advances, raising the quality of health care, and achieving specified targets in the field of health.

In the area of building, reconstruction and modernization of the material base for health care, the Ministry of Health will concentrate its efforts on major national and regional goals. The building, modernization, equipment, and recurring costs of the local health care services will be provided by the district and municipal People's Councils, economic organizations and agro-industrial complexes.

The role of the Medical Academy

The scientific organization and management of the processes, which shape the health of the nation, require also *further strengthening of the role of the Medical Academy*, which recently became an independent, self-governing scientific organization. It plans, organizes and manages the development of the medical sciences and new health technologies, including production for the internal and external market; the education and advanced training of health personnel; provides highly qualified and specializ-

ed diagnostic, therapeutic, and preventive services; and ensures methodological and consultative support to the health services network in the country. Examples of health-related managerial technologies which are being, or will be, provided by the Medical Academy, include:

- different types of electronic equipment, and especially microcomputer systems for health care management;

- methods of measurement and mathematical modelling of the epidemiology and prognosis of diseases, risk factors, and health states;

- technical means for quick access to up-to-date scientific-medical information;

- technology for establishing data banks on district and national level for information related to the health status of the population; environmental sanitation and ecological variables; resources for health and their utilization; inventories, consumption and supplies of drugs and other material;

- personal electronic health record for every citizen of the country;

- computerized consultative diagnostic programs for "bed-side" use by the doctor.

The wide application of economic approaches and mechanisms in the management of health care will be strongly encouraged. The socialist economic organizations, the industry, the agro-industrial complexes, as well as the local People's Councils will have to work together in bringing health care and services closer to the population. Part of the social welfare funds of the self-governing organizations will be designated for the building, maintenance and improvement of the material and technical base of the local health services;

- in industrial enterprises: for the construction, or reconstruction and modernization, of health centres and hospitals, including the provision of equipment, drugs and transportation; for additional incentives to medical and auxiliary staff participating in health care provision for the employees;

- in settlement systems: the funds of local enterprises and of the People's Councils may be used for construction and maintenance of health service units which serve the local population.

The agro-industrial complexes, in view of current discrepancies between the health indicators of the urban and rural population, will have to allocate a larger share of their funds towards supporting and expanding local health facilities, and especially towards providing sufficient material incentives to health staff, to make rural health care an attractive career to them.

On the basis of the economic approaches and mechanisms, the health care system will not only coordinate its activities with those of other sectors, but may also enter into cooperative agreements and other terms of partnership with various ministries, economic organizations and enterprises.

The experience of the Medical Academy concerning the implementation of the economic approach will be an additional source of useful information in this respect.

It is expected that the economic approach in health care will stimulate initiatives for most effective use of the funds and other material resources provided by the state and the socialist organizations, for raising the quality and positive impact of health services. However, this does not imply any form of retreat from the socialist principle of universal and free of charge medical care for the entire population.

Efficiency will be increased also by rational curtailment of unnecessary or wasteful expenditure in health work. Important resources in this respect are: the improvement of the interaction between out-patient (polyclinic) services and hospitals, in view of using more widely the polyclinic for early diagnosis and treatment; the reduction of the average length of stay in hospitals; the expansion of home treatment as an alternative to hospitalization; the elimination of unnecessary laboratory investigations and tests; better use of the available technologies and equipment, etc.

In the near future (1988-1989) the now existing health care structure and organization will be subject to complete evaluation, with special attention to first-contact and primary health care. If necessary, radical measures may be taken to achieve a profound reorganization of the health care system and its management; such changes will be introduced gradually from 1990. The measures will be directed towards 3 main goals: (1) further decentralization, autonomy and streamlining of the health services at district, settlement system, or municipality levels; (2) expanding and improving the effectiveness of the direct participation of the population in the planning, management and evaluation of health activities on local level; (3) creating a system of material and moral incentives for promoting the qualification of health workers and especially of those engaged in primary health care.

FINANCIAL SUPPORT OF HEALTH CARE

According to the Constitution of the People's Republic of Bulgaria and the Public Health Law, all citizens are entitled to free medical care (payment now exists only for dentures, abortion on demand, certain cosmetic services, infants creches, and for part of the cost of drugs prescribed out of hospital).

The development of the health system in contemporary conditions requires considerable expenditures of public resources. Scientific and technological advances which result in new diagnostic and therapeutic methods, equipment, information etc., impose additional financial burdens, which in many countries all over the world tend to increase sharply.

The global trend of rising health care costs also has its effects on health care support in Bulgaria. This is evident from the higher rate of increase of health expenditures in comparison to the growth of national income. While during the period 1970-1980 the average annual rate of national income growth was 6.9% and that of the Government budget 8.8%, health expenditures grew at an annual rate of 10.9%. This rate of increase was related both to the accelerated process of reorganization and modernization of the material base for preventive and curative activities (including supply of new equipment of great variety and quality for the needs of health care), and to the priority development of certain specified areas of the health system, such as worker's health. In 1985 the health care expenditures amounted to 6.1% of the national income.

The state budget finances most of the health care and social welfare in Bulgaria. The allocations for the Medical Academy and other institutes directly subordinated to the Ministry of Health come from the Republican (central) budget while the health and social welfare services subordinated to the local People's Councils are financed from the budget of the respective local authorities. The workers health services establishments are financed both by the People's Councils and by the industrial enterprise whose workers they serve.

When the health budget is drawn up, financial norms and target figures are used, which have been developed according to the type of expenditures. In determining the funds needed, the level of financing during the preceding year is taken into consideration, as well as any new needs, which stem from new objectives or functions. When additional, unforeseen needs arise, they

are met by extrabudgetary subsidies.

Attaining the goal "Health for All" in the conditions of increasing health needs and demands of the population, and the tendency of rising costs of prevention and treatment, places in front of the planning bodies important responsibilities. It is imperative to direct planning towards achieving the highest possible level of medical, social and economic efficiency and quality. These results have to be achieved by the most rational, economic and effective use of the resources.

To this end, the first steps have been made in Bulgaria for implementation of an economic approach and development of a specific health economics mechanism. In the framework of an experiment, in several districts, a new method of management of the health care organizations and services was introduced. The most important features of the experiment are as follows:

- comprehensive planning by introducing resource input indices, data on their use and on the output in terms of achieved change in specified indicators of the health status of the population served.

- expanding the democracy of decision-making by active participation of work collectives and the community at large in the development of the local health service plans;

- establishing proportionality and stability in financing by ensuring funds for free medical care for the population from the state budget on the basis of general norms and limits, differentiated according to types of services and activities;

- creating possibilities for providing additional incentives to health workers in accordance with their individual contribution to the implementation of programmes and the quality of medical service, as assessed on the basis of specific indices and criteria.

The first 3 years of the experiment have demonstrated an increased volume of health activity in the area and a more rational use of the existing resources. As a result of more effective use of the resources and the realized additional volume of activities, a level of effectiveness was achieved, which otherwise would have been possible only if extra staff positions and extra hospital beds had been provided. An improvement in the indices was also visible in the output of health activity in the districts — e. g. decrease of infant mortality, a reduction of morbidity with temporary incapacity for work and of primary disablement, and a decrease of hospital lethality due to myocardial infarction and stroke. The decrease in the total number of sick leave days because of temporary incapacity for work, represents as a matter of fact additionally produced national income.

The conclusions of this experiment will be further analyzed in order to assess the application of the new approach, as well as the need of updating the indices and criteria used in the planning and evaluation of health work.

The future wider introduction of this, or a similar, economic approach in health management will begin by 1990, and its general implementation will be determined in accordance with Government policies and decisions.

A long-term plan and prognosis will be developed for the needs for diagnostic and therapeutic equipment and other technology for the "front line" of health care, such as transportation (specialized vehicles for cardiological, antishock and paediatric teams) etc.

12.

TRAINING AND DEVELOPMENT OF HUMAN RESOURCES

At the end of 1985 the number of doctors in the People's Republic of Bulgaria reached 25,665 and the coverage per 10 000 citizens increased to 28.7. The number of dentists during the same year reached 5,745 and the coverage per 10,000 citizens increased to 6.3. In 1985 there were 4,209 pharmacists, and the coverage was 4.1 per 10,000. The number of nursing and supporting medical staff was 84,231, with a coverage of 94.1 per 10,000.

It is foreseen that in 1990 the number of doctors, will increase to 28,235 or 31.3 per 10,000 citizens; the number of dentists will be 6,228 or 6.9 per 10,000 (with the need of a further increase up to 9.0 per 10,000 citizens), and that of the nursing staff to 94,223 or 104.6 to 10,000 citizens. It is expected that in 1990 the ratio between doctors and dentists, on one hand, and nursing or supporting medical personnel (excluding the assistant pharmacists) will improve and, from 1:2.56 at present, will reach 1:2.62 with a tendency towards further improvement up to 1:3.50 in the year 2000.

According to long-term predictions developed by the Ministry of Health, the number of higher medical staff around the year 2000 is expected to be 31,200, thus reaching a coverage of 33.7 doctors per 10,000 population. No less than 48% of the net increase in the number of doctors will be absorbed by the "front line" of health care, and it is expected that by the year 2000 one-half of all doctors will work in primary health care.

In distributing the staff resources, the priority will be to ensure adequate staffing for programmes to prevent and control socially significant diseases. An increase in the number of doctors qualified in such areas is foreseen — from 40% at present up to 80% by 2000.

The introduction of the achievements of medical science in the field of health care on a large scale underscores the need for such a training of the future doctors, that would enable them to translate scientific and technological advances into solutions of practical problems. In order to improve the quality of training, efforts will be directed towards improving the system of professional orientation and job selection. Special attention will continue to be given to the training of doctors for the speciality of general medicine, which was initiated in 1985. Mechanisms for effective feed-back between the higher medical institutes and health practice will be sought with the purpose of timely introduction of adjustments in the training curricula and programmes, and the evaluation of skills.

One of the main tasks in the future will be to upgrade the system of continuous professional education of the medical staff, in order to create better conditions for continual improvement of their qualification.

In their daily contact with the different social groups the health workers must be the bearers of the highest principles of humanism, medical ethics and deontology. Attention will continue to be given to the moral formation of the health workers and to cultivating their sense of duty and responsibility.

An important form of intellectual stimulation for the young doctors is provided by the national Movement for Technical and Scientific Creativity of the Youth. Within the health system there are now 316 clubs for innovative scientific work by young physicians, with a total of 17,183 participants. Such clubs have been established in over 50% of the hospitals and medical institutes in Bulgaria.

The training of health care managers will continue on the basis of recently developed programmes, and the tendency will be towards ensuring more effective approaches to training, development of managerial skills and habits, and optimization of the training process, by applying innovative methods and maintaining close links to scientific advances and changes in the health system. A prominent place in the training of future managers will be given to the issues of promotion of healthy lifestyles and prevention of diseases, bringing the health service as close as possible to the community and the workplace; the role of the multisectoral ap-

proach; and to involving the full participation of the community in the movement for attaining Health for All.

13. INTERNATIONAL COOPERATION

The last quarter of the 20th century is characterized by the scientific and technical revolution which introduces the achievements of science into all spheres of the social, economic and cultural life of society. However, it is also a period characterized by the accumulation of large quantities of nuclear weapons, which confront all the nations — small and large — with the problem of survival. There are also serious problems of ecology, food, energy, and drinking water supply, which cannot be resolved by any single country in isolation. These global issues necessitate international cooperation, including joint efforts by health workers in different countries.

A problem of utmost priority for the attainment of Health for All by the year 2000, which requires the united efforts of all people of the planet, regardless of race, political views, culture, religion and other differences, is the preservation of peace on Earth. Whether in the year 2000 there will be life on our planet at all, and hence, whether Health for All will remain a meaningful goal, depends ultimately on mankind's ability to halt the nuclear arms race. This should be a deep concern to the health workers all over the world, mobilizing them for participation in the movement for the prevention of nuclear war and for the total elimination of nuclear weapons. The health workers in Bulgaria will continue their active participation in the popular movement for transforming the Balkans into a nuclear-free zone, and Europe — into a nuclear-free continent.

In addition to promoting cooperation towards such general and global goals, international collaboration will be further expanded and strengthened with regard to specific health objectives. The following problems will be of particular interest as possible foci of international cooperation:

- further reduction of infant mortality;
- prevention of ischaemic heart disease;
- prevention of cerebro-vascular disease;
- prevention and treatment of malignant diseases;
- prevention of accidents and injuries;

- prevention and management of mental disorders and stress reactions;
- control of potentially harmful physical and chemical agents in the environment;
- promotion of healthy lifestyles.

With a view to promoting effective cooperation, a number of bilateral agreements will be made with Ministries of Health or other health agencies and scientific institutions in various countries.

In the next decades, Bulgaria will continue its technical cooperation in health matters with the developing countries, in areas considered by them as a priority, such as training, organization and management of health care, appropriate technology for health, etc.

Multilateral cooperation in health is regarded by Bulgaria as being of key importance to the attainment of Health for All. New proposals will be developed for its qualitative upgrading, both within the framework of CMEA and the WHO programmes.

The Medium-term Collaborative Programme between Bulgaria and WHO will focus increasingly during the coming years on the specific European targets for attaining Health for All by the year 2000.

The Bulgarian institutes designated as WHO Collaborating Centres will play the principal technical role in the implementation of joint programmes and activities with the WHO Regional Office for Europe and the WHO Headquarters in Geneva.

The participation of the Bulgarian research institutes in the conception and implementation of WHO programmes will be expanded, and steps will be undertaken for the establishment of further WHO collaborating and reference centres in this country.

International cooperation in the field of health must contribute to the building of confidence and friendship among all the nations of Europe and the other continents, to the clearing up of the international political climate, and ultimately, to establishing conditions favourable for achieving by all people on our planet of such levels of health that would enable individuals, families, and communities to lead economically and socially productive lives.

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